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Aggressive U.S. Reciprocity Evaluated with a New Analytical Approach to Trade Conflicts

Aggressive U.S. Reciprocity Evaluated with a New Analytical Approach to Trade Conflicts

R.J. WONNACOTT

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Foreword

As the United States is the single largest market for Canadian exports, trade-policy developments in that country are of critical importance to Canada, even when Canada is not the target of U.S. policy proposals. Moreover, since the United States is the leading member of the international trade-policy community, developments in U.S. trade policy have major and far-reaching consequences for global trade and investment. In recent years, a number of U.S. policy makers have begun to advocate that the United States follow a policy of 'aggressive' reciprocity, whereby the United States would impose new trade barriers against those countries that did not accord U.S. goods, services and investments treatment similar to that accorded those entering the United States. The U.S. Congress has flirted with a number of bills that would legislate an 'aggressive' reciprocity policy. Should the United States, in due course, enact such a policy in whatever form, it would make a dramatic and, likely, a long-lasting change in the international trade-policy environment.

In this study, Professor Wonnacott provides an analysis of 'aggressive' reciprocity and its development, and constructs a theoretical framework for analysing an 'aggressive' reciprocity policy and the retaliatory protective responses it may induce. The framework is then employed to examine the possible welfare implications on the United States and Japan, the current target against which many U.S. citizens are arguing for 'aggressive' reciprocity. Since Canada would be directly affected by a trade war between the United States and Japan and could someday itself become a target of this type of U.S.

policy, Professor Wonnacott investigates the implications for Canada of the possible adoption of such a policy by the United States. Having once established the welfare implications of the various scenarios that could emerge, Professor Wonnacott concludes this important study with a candid and sharp assessment of the future of the world trading system.

This study, by one of Canada's foremost trade-theory and -policy analysts, makes an important contribution to the international trade-policy debate. Professor Wonnacott has provided a study which will benefit teachers and students, and which international organizations and national governments will find highly useful and relevant in their evaluation of a major trade-policy issue currently active in the international arena.

Gordon Robertson
Past President and Fellow-in-Residence

July 1984

Avant-propos

Les États-Unis constituant le plus important marché d'exportation pour les Canadiens, toute évolution de leur politique commerciale concerne au plus haut point notre pays, même quand le Canada n'est pas la cible directe des énoncés de politique américaine. De plus, étant donné que les États-Unis sont le chef de file en matière de politique commerciale internationale, l'évolution de leur propre politique exerce des répercussions importantes et profondes sur les échanges et les investissements internationaux. Certains responsables américains prônent, depuis ces dernières années, une politique de réciprocité « agressive » qui verrait les États-Unis imposer de nouvelles barrières tarifaires aux pays qui n'accordent pas aux biens, aux services et aux investissements américains un traitement analogue à celui qu'ils octroient eux-mêmes à leurs importations. Le Congrès américain a lorgné du côté de certains projets de loi qui imposeraient une telle politique. Si les États-Unis devaient, le temps venu, adopter cette politique de réciprocité agressive, sous quelque forme que ce soit, le milieu de la politique commerciale internationale s'en trouverait probablement modifié de façon dramatique et pour une longue période.

Le professeur Wonnacott propose dans son étude une analyse de la réciprocité agressive et de sa genèse, en plus d'établir un cadre d'analyse théorique d'une telle politique et des représailles protectionnistes qu'elle pourrait générer. Ce cadre sert ensuite à l'examen de ses conséquences possibles sur le bien-être aux États-Unis et au Japon, cible actuelle de nombreux citoyens américains qui prônent la réciprocité « agressive ». Puisque toute guerre commerciale

entre le Japon et les États-Unis affecterait directement le Canada, susceptible de devenir éventuellement lui-même l'objet d'une telle politique, le professeur Wonnacott examine les implications pour notre pays dans l'éventuel recours à une telle politique chez nos voisins du sud. Une fois établies les conséquences des divers scénarios possibles, le professeur Wonnacott conclut cette importante étude par une évaluation franche et perspicace de l'avenir du régime commercial mondial.

Cette étude, réalisée par l'un des analystes les plus éminents de la théorie et de la politique commerciales, constitue un apport important au débat international dans ce domaine. Le professeur Wonnacott livre ici un travail fort utile aux étudiants et aux professeurs. Les organismes internationaux et les gouvernements nationaux y trouveront une évaluation très pertinente dans l'examen d'une des grandes questions d'actualité en matière de commerce international.

Gordon Robertson
Ancien président

Juillet 1984

The Author

Ronald J. Wonnacott received a B.A. in honours economics from the University of Western Ontario, and an A.M. and Ph.D. from Harvard University. He has taught at the University of Western Ontario since 1958, except for brief periods, such as a year of teaching and research at the University of Minnesota.

Professor Wonnacott has written a number of articles on trade policy, as well as a number of books, including *Canadian-American Dependence* (North-Holland Press) and *Canada's Trade Options* (Economic Council of Canada). With his brother Paul, he has co-authored *Free Trade Between the United States and Canada* (Harvard University Press). With his brother Tom, he has co-authored several books in statistics, including *Introductory Statistics for Business and Economics*, *Regression*, and *Econometrics* (all three published by John Wiley). He is a former chairman of the Department of Economics of the University of Western Ontario, a past president of the Canadian Economics Association, and a Fellow of the Royal Society of Canada.

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R.J. Wonnacott

July 1984

Summary

As a nation heavily dependent on foreign markets, Canada faces the risk of serious damage from two possible future developments:

- The progressive weakening of the General Agreement on Tariffs and Trade (GATT)
- The growth of domestic protectionist pressure in our trading partners, especially the United States.

Although these threats are likely to become less serious if the 1983 recovery continues, they are very unlikely to disappear. One reason is the size of projected U.S. fiscal deficits: the higher interest rates that result exert upward pressure on the U.S. dollar; this makes it difficult for U.S. export- and import-competing firms to match foreign competition, and leads these firms to seek protection.

One recent protectionist proposal is that the United States move away from its traditional multilateral approach to a form of bilateral protection called 'aggressive reciprocity', which could be directed at a single trading partner, such as Japan. This policy would be triggered by the United States if, in its judgement, the current level of Japanese protection were to exceed the current U.S. level of protection. While it is possible that such a policy would achieve a free-trade objective by inducing the Japanese to reduce some of their current protection, there is great concern that the Japanese might respond, instead, with more protection of their own. If Japan did so, there would be some risk that a serious trade conflict might develop between the two countries.

These and other results of a U.S. policy of aggressive reciprocity are examined in detail. The theoretical approach used is a new one that can be applied to aggressive reciprocity or to any other policy that involves a multitude of possible outcomes. In the case of aggressive reciprocity, each outcome depends on the possible Japanese response to thir U.S. policy, the second-round U.S. reply, the further Japanese response, and so on. For each outcome, a rough estimate of the likely welfare effects is attempted. The conclusion is that the most favourable welfare effects will occur if the mere threat of this proposed U.S. policy induces the Japanese to concede some degree of their protection. Thus aggressive reciprocity is one of those strange policies that has the best outcome if it succeeds without actually being introduced.

On the other hand, if aggressive U.S. reciprocity results in a hostile Japanese reaction that leads to a U.S.-Japanese trade conflict, then both countries are likely to lose. Even the one major source of gain for the large country in such a conflict — namely, its terms-of-trade gain at the expense of the small country — cannot be presumed with any certainty. The reason is that in such a *bilateral* conflict, there is a strong possibility of a redirection of U.S. trade that would lead to a U.S. terms-of-trade loss rather than a gain.

If a U.S.-Japanese trade conflict does develop, and the United States consequently diverts some of its import purchases away from Japan to Canada, then Canada could expect to benefit. Set against such benefits, however, would be the losses to Canada and all other countries from the damage that such a conflict would do to the world's trading system.

There is also the possibility that the United States might impose a policy of aggressive reciprocity against Canada. We are particularly vulnerable because our tariffs are higher than those of the United States. If this U.S. policy were to lead to an escalating trade conflict between the two countries, Canada would almost certainly be damaged. On the other hand, if Canada were to respond by reducing its protection, then both Canada and the United States could expect to benefit. But this possibility would pose a political problem. Canada would be conceding, not to a quasi-judicial decision by an international body such as the GATT, but to domestic protectionist pressure from within the United States. While Canadians have been prepared to give up some sovereignty to the GATT — witness our recent concession to the GATT judgement against our Foreign Investment Review Agency — it is far less likely that Canadians would be willing to make similar concessions of sovereignty to the U.S. Congress.

This is but one of the many concerns that would exist were the GATT to become weaker, and were its monitoring of trade to be partly replaced by a U.S. policy of aggressive reciprocity. Thus, this U.S. policy cannot be viewed as an adequate substitute for an international body such as the GATT. But if the GATT were to weaken to the point where the United States were to take some of the policing of the world trading system into its own hands, then a number of specific recommendations might be applied to improve the design of a U.S. policy of aggressive reciprocity. These recommendations would make such a U.S. policy less offensive politically to America's trading partners and render it a more liberalizing, less protectionist, device.

Abrégé

En tant que pays fortement dépendant des marchés extérieurs, le Canada risque de subir des torts considérables dus à deux éléments nouveaux:

- l'affaiblissement graduel de l'Accord général sur les tarifs douaniers et le commerce (GATT);
- la montée des pressions en faveur du protectionnisme chez nos partenaires commerciaux, en particulier les États-Unis.

Même si ces problèmes perdaient éventuellement leur acuité si la reprise amorcée en 1983 se maintient, ils ne s'évanouiraient certes pas complètement et ce, en partie à cause de l'importance des déficits fiscaux prévus par les États-Unis. Les taux d'intérêts élevés qui en résultent exercent une pression à la hausse sur le dollar américain, nuisant ainsi à la compétitivité des sociétés d'importation et d'exportation américaines et les poussent à chercher de la protection.

L'un des récents projets protectionnistes voudrait que les États-Unis délaissent leur traditionnelle approche multilatérale en faveur d'un type de protection bilatérale, qualifié de « réciprocité agressive », visant un seul partenaire commercial tel que le Japon. Les États-Unis mettraient une telle politique en oeuvre s'ils estimaient que le niveau de protection imposé par les Japonais dépaissait l'actuel niveau de protection américaine. Bien qu'il soit possible qu'une telle politique favorise le libre-échange en incitant les Japonais à réduire quelque peu leur protection, on s'inquiète beaucoup du fait que ces derniers réagissent plutôt en l'augmentant. Le cas échéant,

on risquerait d'assister à un grave conflit commercial entre les deux pays.

On étudie en profondeur ces conséquences, avec d'autres possibles, d'une politique américaine de réciprocité agressive. La nouvelle approche théorique peut s'appliquer à la réciprocité agressive ou à toute autre politique dont les conséquences peuvent être multiples. Dans le cas de la réciprocité agressive, chaque résultat dépend de la réaction possible des Japonais à cette politique américaine, de la réaction subséquente des Américains, de la nouvelle réaction des Japonais et ainsi de suite. Après avoir estimé les effets sur le bien-être de chaque résultat, on conclut qu'on obtiendra les effets les plus favorables sur le bien-être seulement si la simple menace du recours à une telle politique incite les Japonais à faire marche arrière en termes de protection. La réciprocité agressive se range donc parmi ces étranges politiques qui ont le plus de succès si on ne les met pas en oeuvre.

Par ailleurs, si une réciprocité agressive de la part des États-Unis suscite une réaction d'hostilité, de la part des Japonais, entraînant les deux pays dans un conflit commercial, personne n'y gagnera. On ne peut même pas présumer des avantages pour le plus grand des pays dans une telle situation — soit ses gains en matière d'échanges aux dépens du plus petit pays — puisque dans le cas d'un tel conflit *bilatéral*, il est fort probable que les États-Unis effectuent un détournement qui provoquerait une perte plutôt qu'un gain en terme d'échange.

Dans l'éventualité d'un conflit commercial entre les États-Unis et le Japon, le Canada pourrait possiblement bénéficier d'un détournement des achats auparavant effectués au Japon. Il faut cependant remplacer ces avantages dans le contexte des pertes occasionnées, tant pour le Canada que pour les autres pays, par les torts qu'un tel conflit infligerait au régime commercial international.

Il se pourrait aussi que les États-Unis imposent au Canada la politique de réciprocité agressive. Nous sommes particulièrement vulnérables dans la mesure où nos tarifs sont plus élevés que les leurs. Si une telle politique américaine devait engendrer un conflit commercial de plus en plus âpre entre les deux pays, le Canada subirait presque certainement des pertes. Par contre, si le Canada devait réagir en réduisant sa protection, les deux pays pourraient s'attendre à des bénéfices. Une telle possibilité soulève cependant des problèmes d'ordre politique. Le Canada plierait alors non pas devant le jugement quasi-judiciaire d'un organisme tel que le GATT, mais devant des pressions protectionnistes intérieures en

provenance des États-Unis. Même si les Canadiens sont prêts à renoncer à une certaine souveraineté face au GATT — on n'a qu'à songer aux concessions faites par le Canada suite au jugement du GATT à l'encontre de notre Agence d'examen de l'investissement étranger — il parait très peu possible qu'ils agissent de même, face au Congrès américain.

Ce n'est là qu'une des nombreuses préoccupations qui verraient le jour si le GATT devait s'affaiblir et si ses contrôles des échanges devaient céder le pas devant une politique américaine de réciprocité agressive. Si le GATT s'affaiblissait d'ailleurs au point que les États-Unis prennent à leur compte une partie de la surveillance du régime commercial international, on pourrait alors formuler certaines recommandations en vue d'améliorer la teneur de la politique américaine de réciprocité agressive. Cette politique des États-Unis ne peut donc se substituer adéquatement à l'organisme international comme sous le nom de GATT. Ces recommandations permettraient d'en atténuer le caractère politiquement choquant pour les partenaires commerciaux des États-Unis et de perfectionner un mécanisme pour favoriser davantage la libéralisation que la protection.

1: *Setting the Stage*

Introduction

Major changes are now occurring in the world trading scene. There is now a substantial risk that the post-World War II policy of liberalizing trade, as manifested in the Kennedy and Tokyo Rounds, will lose its impetus. This risk exists, in part, because of a revival of protectionism during the severe recession of 1981-82. But, in part, it is because of longer-term developments. With our success in reducing tariffs over the past two decades, our problem has increasingly become how to deal with the non-tariff barriers (NTBs) that have, in large measure, replaced tariffs. For purely technical reasons, it is much more difficult to deal with NTBs, in terms of identifying and quantifying them; in terms of establishing whether or not they are justified on other grounds, such as health standards; and in terms of preventing the introduction of new NTBs that are suddenly discovered by governments under domestic protectionist pressure.

While this shift from tariffs to NTBs has been documented elsewhere,[1] other important changes have also been occurring. One that is still only a possibility is dramatic enough to be considered in detail: a shift in U.S. policy away from the traditional U.S. multilateral approach towards bilateralism. One of the most forceful recommendations of this kind is the proposal for a protective policy of 'aggressive reciprocity' that surfaced in the U.S. Congress in 1982. A major task in this report will be to provide a theoretical framework for analysing that policy and the retaliatory protective responses it may induce. We shall then use that framework to examine the possible welfare implications of this policy on the

United States, on Japan, against which the policy was aimed, and on third countries, in particular, Canada. Our hope is that the analytical technique we develop for assessing this policy may be used more generally to evaluate many other possible forms of trade conflict or trade war.

Finally, we shall look ahead. There is now a real risk that in the next decade, the General Agreement on Tariffs and Trade (GATT) will become seriously weakened in exercising its role of enforcing the 'rules of the game' in international trade. This is a prospect which is of great concern in every country, but, in particular, in a small country like Canada, which depends heavily on trade; rules of the GATT are the only ultimate 'protection' that Canada now has in a world of giant trading countries and blocs. An ineffective GATT is a prospect that, one hopes, Canadians will never have to face. But if we do, the question is: Shall we have a chaotic system without effective control in which, in the style of the 1930s, world trade and real income are massively damaged? Or will some other form of monitoring the system develop? Specifically, will some form of policing be undertaken bilaterally by the United States, perhaps unintentionally, as part of an American attempt to keep its own trade relations under control? And if so, what measures could be taken to prevent such a U.S. policy from becoming politically offensive and economically damaging to its trading partners?

To set the stage, we begin by considering some of the growing pressures towards protectionism in the world economy in the early 1980s; these pressures have explained, at least in part, the current rise from relative obscurity of U.S. policies like aggressive reciprocity.

Protectionist Pressures in the International System

In the last decade, there has been an increasing realization that fine-tuning policies of adjusting aggregate demand cannot solve the unemployment problem; as a result, governments have come under increased pressure to protect existing patterns of employment with various defensive microeconomic measures. These measures have included not only traditional protection against imports, but also direct subsidization of declining industries. Economists have correctly argued that *in the long run*, such policies of microeconomic intervention have created distortions which have slowed down the adjustment to structural change and have thus exacerbated the unemployment problem. But such arguments have not prevented

governments from continuing to protect, because of the apparently favourable *short-run* effects of this policy on employment.[2] A further problem arises because those responsible for administering the protection of employment in a specific industry are often far more familiar with the short-run problems of the industry than with the long-run benefits of a liberal trading system. In particular, they often fail to recognize how their attempts to protect an industry from the need to adjust reduce the growth potential of the economy as a whole.

By the early 1980s, the pressure on government to undertake defensive microeconomic measures of protection were increased by a very special set of macroeconomic circumstances. In particular, the 1981-82 combination of high real U.S. interest rates and recession raised special problems in the world economy, above and beyond, of course, the obviously depressing effect of the recession on world exports. Of special concern was how the U.S. recession increased protectionist pressure in that country — a pressure that was augmented by two other problems brought on by high interest rates: a slower rate of U.S. capital formation, and a high value of the U.S. dollar. Both of these problems made it difficult for U.S. industry to export and to compete with imports,[3] and hence for the U.S. administration to resist protection.

Moreover, high U.S. interest rates increased the burden of indebtedness faced by a country like Mexico, both because the interest rate it had to pay was higher, and because the denomination of its debt — the U.S. dollar — had also risen in value.[4] The resulting prospect of default by such heavily indebted countries has brought the International Monetary Fund (IMF) into rescue efforts; these involve the Fund's imposed discipline on each such debtor country to increase its exports and reduce its imports. It is not clear how all debtor countries can take this action simultaneously, but the greater their efforts, the greater the pressure on the trade balances of the highly developed countries. This increased pressure tends further to aggravate protectionism in the highly developed countries.

With the recent economic recovery, however, these pressures are becoming less severe. The question in the short term thus becomes: How substantial and sustained will the recovery be? The answer to this question will be influenced by what happens to U.S. interest rates: Will they rise again, as the recovering business demand for funds augments the continued pressure on financial markets from the U.S. treasury's financing of its very large deficit? To what degree will this pressure be offset by downward pressure on interest rates as the expectation of inflation adjusts to the lower

inflation rate that now prevails, and as the flow of savings increases with economic recovery?

Since roughly 70 per cent of Canada's trade is with the United States, continued access to the U.S. market is critical for Canadians. There is, therefore, a justified concern in Canada about the form and intensity of any new potentially protectionist recommendation that may emerge in the United States, such as the proposal for aggressive reciprocity, which we shall now consider in detail.

Notes

1. For example, H. Marvel and E. Ray, "The Kennedy Round: Evidence on the Regulation of International Trade in the United States", p. 190.
2. For more detail on this point and some of the others noted in this section, see Richard Blackhurst, "The Twilight of Domestic Economic Policies".
3. The large capital inflows attracted by high U.S. interest rates raised special problems for U.S. export- and import-competing industries. Because of the flexible exchange rate, the inflows of capital (or, more precisely, the U.S. surplus on capital account) had to be offset by a deficit on current account. In other words, the U.S. dollar had to rise by whatever amount was necessary to create an offsetting current account deficit, i.e., an offsetting reduction in U.S. export- and import-competing activities. Thus it was impossible for these sectors jointly to defend themselves completely against considerable contraction.
4. Mexico has had to face the additional problem of a falling world price of oil. While this has not been a problem for many of the other heavily indebted developing countries — indeed, for those dependent on oil imports, a falling price reduces the pressure — some of these countries, such as Brazil and Argentina, have, for other reasons, developed debt problems of roughly the same magnitude.

2: *Aggressive Reciprocity: A New U.S. Option?*

A number of recent trade bills before the U.S. Congress[1] have been based on an entirely new interpretation of the term 'reciprocity'. Whereas this term has been used in the past to describe policies aimed at liberalizing trade, it was not clear whether the form of reciprocity being considered in 1982-83 would liberalize or restrict trade. To clarify this issue, consider four very different sets of policies, all of which can be termed 'reciprocity':

- Active policies to liberalize trade by reciprocally reducing tariff barriers among all countries (multilateral reciprocity) or between two countries (bilateral reciprocity). Such policies result in increased trade, with collective welfare gains, except in the case of bilateral reciprocity if there is substantial enough trade diversion to make the costs of this policy exceed the benefits.
- Passive policies of withholding trade concessions to countries that are not prepared to reciprocate. An example occurs among the members of the General Agreement on Tariffs and Trade (GATT), where a country is not *required* to give most-favoured-nation (MFN) treatment to non-participating countries.
- Policies of matching any increases in foreign protection with automatic increases in U.S. protection. Such policies can increase protection; or they can liberalize trade, at least in the sense of preventing the present trading system from becoming more protectionist.

- Policies that would allow the United States to impose new trade barriers against countries whose *existing* barriers to trade are *judged by the United States* to be higher than corresponding American barriers. Such policies would be more likely to be used as a protectionist device. This is the set of policies that has been described by William Cline as 'aggressive reciprocity'.[2]

Note that the further we go down this list, the less likely it is that the policy will liberalize trade, and the more likely that it will turn out to be a protectionist device. Historically, Americans have used the term 'reciprocity' in the first, and perhaps the second, sense. Now it is being used in the third and — particularly before Congress in 1982-83 — in the fourth sense. Before analysing this last category of policies in detail, we shall first consider the claim that such policies deserve public support.

The Background: A World of 'Created' or 'Engineered' Comparative Advantage?

To a considerable degree, the support for this new U.S. policy proposal has been based on the view that in a wide range of emerging products, comparative advantage may be 'arbitrary', that is, 'created' or 'engineered', rather than determined by traditional considerations such as factor endowments. Of course, endowments still determine who produces oil and bananas, but not — according to this view — a broad range of high-tech products that may now be equally well produced in the United States, Europe or Japan.

There are two broad reasons for this:

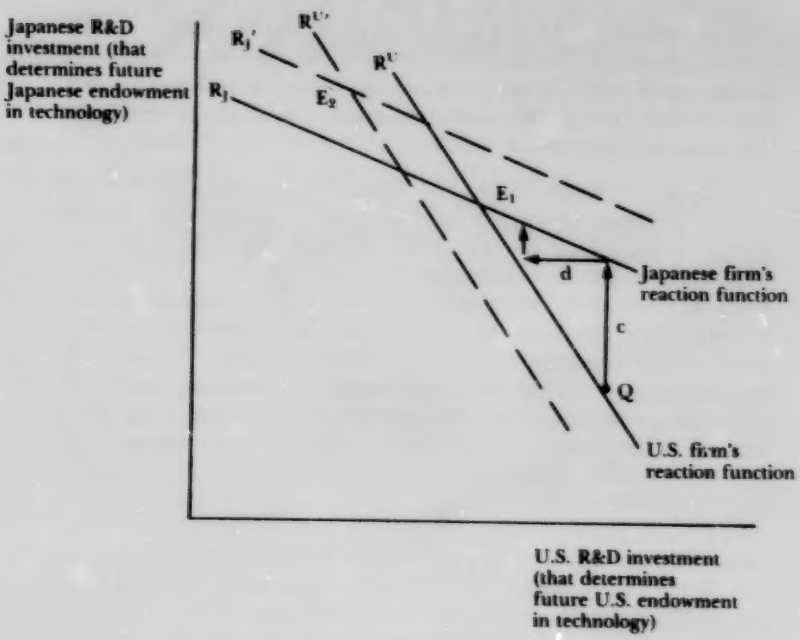
- Differences in factor *endowments* — especially among North America, Europe and Japan — are no longer as important as they used to be because some factors have become more freely *available*. For example, one factor crucial for high-tech industries, namely, capital, has become increasingly mobile among countries. Accordingly, differences in labour/capital endowments have become less significant. Moreover, in many new high-tech products, natural resources are not an important factor.
- Technology has become a more critical consideration. For example, the importance of technology is recognized in the 'life-cycle theory'. According to this theory, new products are invented, produced and exported in the technologically advanced country. However, this lasts only for a brief period until production becomes routine and is copied by technologically less-

advanced nations. But by then the technologically advanced country has moved on to the development of new products and processes. Indeed, it has been argued that technological capacity should be viewed in its own right as a factor of production, and an increasingly important one, at that. However, it is 'created rather than endowed'.[3] Thus a natural question that is asked is: How can technological capacity be created, and thus provide a future comparative advantage in technology-intensive industries which in many, but not all, cases are rapid-growth, relatively high-income industries?

In these circumstances, the U.S. concern is that the Japanese may be able to create a comparative advantage in technology-intensive goods through their current policy of 'targeting' certain of these products, and then subsidizing and protecting them in the Japanese market, while at the same time enjoying the relatively free access allowed these goods to the U.S. market.[4] Suppose this targeting policy of the Japanese succeeds in 'picking a future winner'. (We assume this hereafter, while recognizing that in practice, the process of picking winners is not easy: often the Japanese pick losers instead. Their losers are less visible, however, since winners get across the Pacific, while losers do not.) To the degree that Japanese targeting *is* on winners, the Japanese may judge, strictly from their own narrow point of view (and assuming no retaliation by trading partners) that this sort of modern-day 'infant protection' may be justified.[5] This justification may follow from the profits that are eventually earned in these activities,[6] plus externalities, such as the additions these activities make to the Japanese technological endowment, which may give the Japanese a comparative advantage in future high-tech activities. An example cited has been the Japanese fostering of production in 16K and 64K RAM (random access memory) semiconductor chips.[7]

A simplified view of the theoretical analysis now being used to describe this sort of situation[8] is shown in Figure 2-1. We assume that there is only one Japanese and one U.S. firm in this industry. The U.S. firm's reaction function R_U shows how its R&D (research and development) investment depends on the amount of R&D investment undertaken by the competing Japanese firm: the greater the level of Japanese investment, the lower the profitable level of investment the U.S. firm can undertake. Clearly, embedded in any such reaction function are a number of assumptions about how each firm responds to the other. But given the U.S. and Japanese reaction functions (R_U and R_J) shown here, there is a stable equilibrium at E_1. To confirm, note that if the initial point is, say, Q,

Figure 2-1: *Protection and R&D (Research and Development) Expenditures*



the Japanese firm will increase its R&D along arrow c. This will then induce the U.S. firm to reduce its R&D along arrow d; and so on, until stable equilibrium E_1 is reached. Obviously, different behavioural responses by firms may lead to different reaction functions, and these need not necessarily lead to the sort of stable equilibrium shown here.

Now suppose that the Japanese protect this industry. This increases the domestic sales by the Japanese firm and thus makes it profitable for the firm to invest more: that is, the Japanese reaction function shifts from R_J to R_J'. At the same time, reduced access to the Japanese market reduces the return to R&D investment by the U.S. firm, shifting its reaction function down to R_U'. Accordingly,

equilibrium shifts from E_1 to E_2. Thus Japanese protection results in less investment in R&D in the United States and more in Japan. With this increased technological capacity, the Japanese may have 'created' a comparative advantage in high-tech activities.

But, according to this argument, this Japanese protection is unambiguously costly for the United States. It not only reduces the United States' R&D investment, and thus weakens the future U.S. competitive position in high-tech industries; it also causes an immediate welfare loss to the United States because of the distorting restriction placed on its exports to Japan. Why, say proponents of aggressive U.S. reciprocity, should Japanese producers be given a free ride by being allowed to protect their home market while taking advantage of relatively free access to the U.S. market? Why should their exports not face the same barriers when entering the U.S. market that U.S. goods face in entering the Japanese market? In terms of Figure 2-1, if Japanese protection has shifted the curves as shown, and thus has moved equilibrium from E_1 to E_2, why should the United States not respond by protecting its own market? This would shift the curves back towards their original positions, thus moving the equilibrium back towards E_1 and, accordingly, preventing the Japanese from creating a comparative advantage in high-tech activities.

While this theory does not always hold, even in high-tech activities, it provides a useful way of enlightening the problem. Moreover, for the sake of argument, in the analysis that follows, we assume that this theory does hold in the industries being considered; accordingly, an American policy of aggressive reciprocity would yield potential benefits to the United States. The difficulty is that this policy might also involve a number of costs.

Some Disturbing Aspects of Aggressive Reciprocity

Consider the following five problems that this policy raises:

- It will result in increased U.S. protection unless it succeeds in reducing Japanese protection and is then automatically liquidated. Otherwise, some or all of this newly introduced U.S. protection will remain, reducing trade, and having the standard negative effect on collective welfare, and U.S. welfare.
- Bilateral U.S. protective measures aimed at a specific partner would damage the multilateral principle of equal treatment to all most-favoured-nation (MFN) partners in Article II of the GATT. (There are already a limited number of exceptions in the GATT

to the general principle of multilateralism. For example, the formation of a customs union or free-trade area is a form of bilateral action that violates the multilateral principle; but this action is recognized as acceptable, within limits specified in Article XXIV.)

- Aggressive reciprocity is based on a very special and controversial concept of equal treatment. In trade negotiations in the past, the attempt, by and large, has been to equalize *changes* in protection; but this new concept of reciprocity attempts to equalize *existing levels* of protection. In other words, the United States would be raising trade barriers against trading partners whose levels of protection might not have changed at all; their only offence might be that their *existing* barriers are judged *by Americans* to be higher than those of the United States.
- Although the present target for this U.S. policy is Japan, it is easy to see how, once it is in place, it might be turned against Canada: in many industries, Canadian tariffs are higher than corresponding tariffs in the United States, thus making Canada vulnerable to an American attempt to achieve 'reciprocity' by increasing U.S. barriers to our exports.
- This situation, in turn, raises another problem. Some Canadian sacrifice of sovereignty cannot be avoided as long as Canada signs trade agreements under the GATT. But this sacrifice is more than made up for by our improved access to foreign markets: that is, by our trading partners' sacrifice of sovereignty, when they also sign these agreements. But if the United States is attempting partially to replace the GATT in monitoring the world trading system by means of aggressive reciprocity, the Canadian problem of loss of sovereignty becomes more severe. Our domestic policies that have unavoidable implications for our international trade — such as our programs of regional industrial subsidization — would be monitored far less by the GATT control mechanism and far more by the United States' exercise of 'judgement'. This raises problems of sovereignty in any case, but especially so if the U.S. Congress becomes more protectionist.

Of these five problems, one that raises subtleties now worth considering further is the third: U.S. trade barriers would be triggered, not by a change in a partner's protection, but, instead, by a U.S. judgement that a partner's existing protection exceeds that of the United States.

The Problem of Objectively Comparing Relative Levels of Protection

In a world in which non-tariff barriers (NTBs) are becoming increasingly significant as tariffs fall, it grows difficult to establish that one country has more protection than another. As evidence that Japan protects more than the United States — and should therefore be the target of U.S. policy — some Americans have cited their large trade deficit with Japan. But as William R. Cline has emphasized,[9] it cannot be argued that a trade deficit necessarily means that a partner's market is less open than one's own. This is just as well, since otherwise the Europeans might try to use their present large trade deficit with the United States to justify increased protection against that country. For another simple illustration, consider a world completely free of trade barriers, where all countries have identical zero levels of protection, and where reciprocity, by any standard, is thus perfectly and unambiguously achieved. Even in such circumstances, there is no reason to expect that *bilateral* trade between any two countries would be anywhere near balanced.

Nor can one establish, just by comparing existing tariffs and identifiable NTBs, that Japan has substantially higher protection than the United States. Japanese tariffs are now at about the same level as those of the United States, in part because Japan has accelerated its Tokyo cuts; moreover, Japan has fewer highly visible NTBs than the United States. The products protected by major NTBs comprised 34 per cent of the U.S. domestic market, but only 7 per cent of the Japanese market.[10] But of course, it is necessary to go beyond these visible NTBs and consider less transparent NTBs, with which the Japanese are viewed as past masters. And how does one arrive at a convincing and objective conclusion in this very misty uncharted territory? Faced with this problem, the Europeans, for instance, in apparent exasperation, have lodged an omnibus complaint against Japan in the GATT. But because this complaint is so vague — amounting almost to the statement that "Japan itself is a violation of the GATT" — it seems unlikely that it will be sustained. Moreover, the Europeans suggest that one Japanese offence is Japan's persistent trade surplus in manufactured goods. But given Japan's *inevitable* dependence on foreign resources, how can the Japanese avoid this situation?

The problem, of course, is that any Japanese trade barrier tends to be viewed as more restrictive by the Americans than by the Japanese. While this applies with respect to visible Japanese trade barriers, it typically applies to an even greater degree with respect to

less visible NTBs. For example, some of the complex Japanese regulations that make it almost impossible for American firms to do business in Japan are viewed by the United States as impenetrable NTBs. But this is not the view taken by the Japanese, who simply see these barriers as part of the institutional and cultural framework of doing business in Japan. And why, the Japanese argue, should not Americans have to struggle to learn how to cope with Japanese institutions, just as the Japanese have had to learn to cope with North American and European institutions?

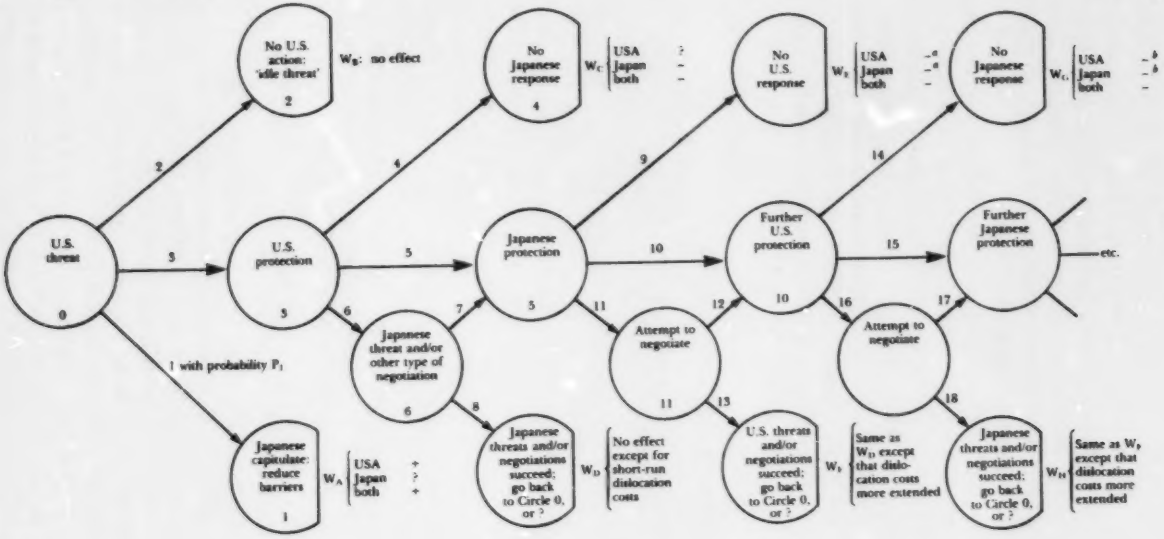
Because each country tends to make a biased judgement on any given protective device, seeing its own device as less protective than another's, any attempt by one partner to force 'equality' may lead to an open-ended escalation of protection and counter-protection. Specifically, any barrier to Japanese goods raised by the United States in the name of *equalizing* the protection of the two countries, will tend to be viewed by the Japanese as providing the United States with *greater* protection. Accordingly, the Japanese — perhaps also invoking the principle of reciprocity — may retaliate by introducing new trade barriers of their own. Thus the dynamics of aggressive reciprocity may lead to a world of ever-escalating protection.

Of course, supporters of reciprocity emphasize another possible outcome: the initial U.S. threat of imposing trade barriers may induce the Japanese to reduce their barriers or prevent them from introducing new ones. In this case, such aggressive reciprocity may, like the more traditional forms of reciprocity, lead towards more liberalized trade. But the issue is more difficult even than this, because these are not the only possible outcomes. Once initiated, aggressive reciprocity can lead to a large number of possible results. We detail some of these in Figure 2-2, with an analytical approach that may similarly be applied to other prospective changes in commercial policy.

Aggressive Reciprocity: An Analysis

The problem is not just that aggressive reciprocity may lead to so many possible outcomes. In addition, it is difficult to specify the welfare implications of each possible eventuality. None the less, we can still achieve many insights: while it is not feasible to evaluate specifically and quantitatively the welfare effect of each outcome, it is fortunately not difficult, with many of these outcomes, at least to identify, with a reasonable degree of confidence, the direction of change in welfare.[11]

Figure 2-2: *Aggressive U.S. Reciprocity*



Notes

a. See reservations in notes *e* and *h* to Table 2-3.

b. Since the effect of the 'second strike' of U.S. protection at Circle 10 has an ambiguous overall effect on the United States and a clearly negative effect on Japan, one can be somewhat less certain of a loss here for the United States, but more certain of a loss for Japan.

Moreover, for many of these outcomes, it will be possible to answer the key question — Will welfare increase or decrease? — not only for the United States, but also for Japan, and for both countries together. While we evidently shall not have the 'final word' on this subject, we shall be able to see much more clearly through the fog of uncertainty that surrounds this policy.

Suppose that the United States goes beyond the present general view that the current trading system involves a *de facto* bias against it and specifically judges that Japanese protection is greater than American protection; suppose further that, as aggressive reciprocity allows, the United States threatens to impose new trade barriers against Japanese goods, as indicated by Circle 0 at the left of Figure 2-2. Initially, there are three possible results, shown by Paths 1, 2 and 3.

Path 1: Japanese Capitulation

Under pressure, the Japanese may reduce the trade barriers that offend the United States: that is, they may move along Path 1 in Figure 2-2. If this happens, then the United States has succeeded without further action, and the story ends here, as indicated by the fact that Circle 1 is squared off on the right. In this case, the U.S. policy of aggressive reciprocity has the welfare effects detailed in Table 2-1.[12] Note that the three summary 'overall' effects, derived in this table, on the United States, on Japan, and on both countries taken together, are entered as W_A at Circle 1 of Figure 2-2. Note also that in calculating each of these overall effects, we take into account not only the traditional efficiency and terms-of-trade effects, but also one of the most prominent issues in this debate: possible 'infant industry' benefits mentioned in our earlier section on 'Created Comparative Advantage', which may go to the country whose protection attracts and/or holds new activities.

In sum, if the Japanese yield to U.S. pressure and reduce their trade barriers, then this U.S. policy will have been successful: it will have achieved an increase in U.S. welfare. Moreover, the joint welfare of the two countries will also have increased. However, the welfare effect on Japan is not clear. These are the three basic conclusions entered as W_A in Figure 2-2.

But suppose that the Japanese do not reduce their protection: that is, they do not follow Path 1. Then the United States can do what it has threatened to do, that is, impose protection (Path 3). On the other hand, it can, if it prefers, do nothing. In that case, its threat has been an idle one. It has followed Path 2.

Table 2-1: *Welfare Effects W_A on the United States and Japan if Japan Concedes to the U.S. Threat and Reduces its Protection*

The calculations for the United States and Japan in Parts 1, 2, 1′ and 2′ in this table are based on Statement A3 in the Appendix, with A standing for Japan, and B standing for the United States. But since Japan is *reducing*, rather than *imposing*, a trade barrier, all signs change.

		Sign of expected effect
I	The Effects on the United States (Country B)	
1	Efficiency gains in production and consumption	+
2	Terms-of-trade improvement	+
3	Infant benefits, if part of this industry that would have developed in a protected Japanese market develops in the United States instead	+
	Overall	+
II	The Effects on Japan (Country A)	
1′	Efficiency gains (in production and consumption)	+
2′	Terms-of-trade loss (other side of the 'U.S. terms-of-trade improvement' coin)	−
3′	Infant-industry benefits lost to the United States in point 3 above	−
	Overall	?
III	The Effects on Both the United States and Japan Taken Together	
1″	Efficiency gains for both	+
2″	Terms-of-trade effects cancel. Specifically, 2 and 2′ above cancel. (Both appear as area 1 in Figure A-3, below)	zero
3″	Infant-industry effects (3 and 3′) tend to cancel[a]	approx. zero
	Overall	+

Note

a. Since infant-industry benefits are based on externalities and future profits of the industry once it has 'grown up', the induced shift of an industry from one country to another will tend to redistribute, rather than create, such benefits. Thus we assume, as a rough first approximation, that any such benefits acquired by one country will be offset by losses of the other country.

Path 2: U.S. Inaction and the Idle Threat

If the United States chooses Path 2, nothing happens to the levels of protection; thus there are no welfare effects (W_B). Note that the story ends here, just as it did on Path 1: as before, we indicate this by squaring off the right-hand side of the circle and setting out the welfare effects alongside, as W_B. Although our formal evaluation in this case leads us to conclude that there would be a zero welfare effect, there may be a future cost to the United States from being discovered in an idle threat. In this case, the cost might be a reduced U.S. influence in future trade negotiations.

Suppose that the United States initially decides, even before threatening the Japanese, that its threat will be an idle one: that is, no matter what the Japanese do or do not do, the United States will not impose its threatened trade barriers.[13] In other words, the United States guarantees against a move along Path 3 in Figure 2-2 by setting the probability of such a move (P_3) at zero.

If $P_3 = 0$, there are only two possible outcomes: W_A with probability P_1, and W_B with probability $P_2 = 1 - P_1$. Hence the expected welfare E(W) from this U.S. policy is:

$$E(W) = P_1W_A + P_2W_B \quad \text{(Equation 1)}$$
$$= P_1W_A + (1 - P_1)W_B \quad \text{(Equation 2).}$$

Thus, if W_A and W_B could be evaluated, the expected value to the United States of this policy of 'only moderately aggressive reciprocity' — that is, the United States will threaten, but not act — would depend solely on a judgement about the probability P_1 that the Japanese would concede to the U.S. threat.

Path 3: Imposition of the Threatened U.S. Trade Barriers

Suppose that the United States does not rule out the possibility of enacting its threat to increase its protection, that is, $P_3 \neq 0$. Now the problem is much more complicated, not only because all three probabilities (P_1, P_2 and P_3) are now in play, but also because, if any move occurs along Path 3, the story does not end there, as it did with a move along Path 1 or Path 2. Instead, the ball is now in the Japanese court. How will the Japanese react? Will they follow Path 4, 5 or 6?

Path 4: No Further Japanese Action and the End of Conflict

If a move occurs along Path 4, what would be the resulting welfare effects W_C? In assessing these effects, note that the only *actual* change in protection since this U.S. policy was initiated at Circle 0 has been the introduction of U.S. protection. The welfare effects of this are shown as W_C in Figure 2-2. These effects are detailed in Table 2-2; they are derived from statement A3 in the Appendix, with the change that the United States is now country A, and Japan is Country B.

We must now recognize a potentially important complication. We do not live in a two-country world. The newly introduced U.S. protection is discriminatory: that is, it is aimed at the Japanese only, but not at other countries. Therefore it may not just reduce trade with the Japanese as assumed in Table 2-2. Instead it may *divert* trade from Japan to third countries: that is, it may result in a switching of U.S. import purchases from the Japanese to third countries. To evaluate the welfare effects, we draw on a new theory of 'anti-customs unions', a theory of bilateral *discrimination*, rather than bilateral *preference*.[14] Preference theory, that is, the theory of customs unions, examines the effects that result when countries provide preference in *favour* of one another. The theory of discrimination, or 'anti-customs union' theory, examines the effects of countries discriminating *against* one another.

If trade is diverted rather than reduced, the major amendment that must be made to Table 2-2 is to change the effect 2 on the U.S. terms-of-trade from positive to negative. This makes an overall U.S. loss more likely, and thus increases the expected overall loss to both countries. In sum: recognizing the possibility of trade diversion does not change the sign of the welfare effects W_C in Figure 2-2. However it makes a loss for the United States more likely and increases the collective loss.

Path 5: The Japanese Respond with Their Own Form of Protection

If the Japanese respond in this fashion, the contest continues; the ball is now in the U.S. court at Circle 5. However, Path 6 offers another possible Japanese response.

Table 2-2: *Evaluating W_C, the Effect of the Imposition of a U.S. Trade Barrier against Japanese Imports (assuming these U.S. import purchases are reduced, but not diverted to another country)*

In evaluating 1, 2, 1′ and 2′ below, use Statement A3 in Appendix, letting A be the United States and B be Japan.

		Sign of expected effect
I	For the United States	
	1 Efficiency losses (production and consumption)	–
	2 Terms-of-trade effect	+
	3 'Infant-industry' benefits from own protection	+
	Overall	?
II	Effects on Japan (Country A)	
	1′ Efficiency losses	–
	2′ Terms-of-trade loss	–
	3′ Infant-industry losses from foreign protection	–
	Overall	–
III	Both Together	
	1″ Efficiency losses (1 + 1′)	–
	2″ Terms-of-trade effects (2 and 2′) cancel	zero
	3″ Infant-industry effects (3 and 3′) tend to cancel	approx. zero
	Overall	–

Path 6: A Japanese Attempt to Remove the New U.S. Protection through Negotiation or Threat

If the Japanese follow Path 6 and this strategy succeeds, then the two countries will follow Path 8. With the new U.S. protection removed, the two countries 'get back to Circle 0', and the conflict ends here, with welfare effects W_D. We shall consider later the possibility that the two countries successfully negotiate an agreement, but their agreement does not take them precisely back to Circle 0. For example, the United States may not remove all of its new protection, or may do so only if the Japanese reduce some of the trade barriers that originally caused this conflict.

If Path 8 is followed, and the only protection actually introduced so far (that is, that of the United States at Circle 3) is thereby removed, then W_D, the welfare effect of this outcome is zero, except for any short-run costs and dislocations resulting from the imposition and withdrawal of that U.S. protection.

Path 7: Failure of Negotiations and Resulting Japanese Retaliation with its Own Form of Protection[9]

Any such move along Path 7 would, like the move along Path 5, bring us to Circle 5: Japan retaliates, and the two countries do not escape from the cut and thrust of retaliation and counter-retaliation that runs left to right through the centre of this diagram. With this new form of Japanese protection in place, the ball is now in the U.S. court; the Americans now face the same choices that the Japanese faced at Circle 3 in the previous stage of this contest; and so on.

With this background, the reader can now fill in the rest of the story in Figure 2-2.

General Observations

We need only elaborate a few important points. To begin, suppose that, following the imposition of Japanese protection at Circle 5, there is no further U.S. response (that is, the United States selects Path 9), with welfare result W_E. Each country will have imposed one round of protection against the other. Table 2-3 details the effects, with the overall effects on each country, and on both countries together, calculated in the last (summary) column; it is these overall effects that appear as W_E in Figure 2-2.

Table 2-3 is straightforward in most respects. For example, the U.S. column simply reproduces the effect of U.S. protection on each economy from Table 2-2, also taking into account the terms-of-trade loss to the United States if its protection diverts its trade. And, of course, the Japanese column is similar, except that the roles of the two countries are reversed. However, some special notes about Table 2-3 are in order:

- If we horizontally sum the effects of *both* tariffs on the United States (along the first row), the result is entered on the right-hand side (the first block in the last column). We could similarly sum the effects of both tariffs on Japan (along the second row) and again enter the result in the last column on the right. Footnoted reservations are necessary here because, for example, we cannot precisely compare a U.S. 'infant benefit' from its own protection with its 'infant loss' from Japanese protection (that is, we cannot compare item 3 in the U.S. and Japanese columns). For this reason, the summary item 3 in the last column is left with a question mark.

  Because of this and other similar footnoted ambiguities in this last column, it is impossible to add up this last column vertically to

Table 2-5: *Evaluating W_E in Figure 2-2*

	Country Introducing Protection	United States		Japan		Both Countries	
		Effects of U.S. Protection at Circle 3		Effects of Japanese Protection at Circle 5		Effects of Both Countries' Protection	
	Country Affected by that Protection	This column same as the evaluation of W_C in Table 2-2, noting 'trade diversion' modification explained at the end of the description of Path 4, above.		This column same as U.S. column on the left, with the roles of Japan and the U.S.A., of course, reversed.			
I	Effects on the U.S.A.	1 Efficiency losses	–	1 Efficiency losses	–	1 Efficiency losses	–
		2 Terms-of-trade effect	?	2 Terms-of-trade loss	–	2 Terms-of-trade loss[c] likely	–
		3 Infant-industry effect	+	3 Infant-industry effects	–	3 Infant-industry effects[d]	?
		Overall	?	Overall	–	Overall[e]	–
II	Effects on Japan	1′ Efficiency losses	–	1′ Efficiency losses	–	1′ Efficiency losses	–
		2′ Terms-of-trade effect	–	2′ Terms-of-trade loss	?	2′ Terms-of-trade loss[f] likely	–
		3′ Infant-industry effect	–	3′ Infant-industry effects	+	3′ Infant-industry effects[g]	?
		Overall	–	Overall	?	Overall[h]	–
						(Sum of estimates to the left, not above)	
III	Effects on Both Countries	1″ Efficiency losses	–	1″ Efficiency losses	–	1″ Efficiency losses	–
		2″ Terms-of-trade effects[a]	–	2″ Terms-of-trade effects[b]	–	2″ Terms-of-trade effects	–
		3″ Infant-industry effects (3 and 3′ above tend to cancel)	approx. zero	3″ Infant-industry effects (3 and 3′ above tend to cancel)	approx. zero	3″ Infant-industry effects	approx. zero
		Overall	–	Overall	–	Overall	–

Notes

a. To the degree that there is no trade diversion, U.S. and Japanese terms-of-trade changes will cancel. On the other hand, to the degree that there *is* diversion, then there will be no Japanese terms-of-trade improvement, but there *will* be a U.S. terms-of-trade loss. (See R.J. Wonnacott, "The Theory of Trade Discrimination".) Thus, so long as any diversion at all occurs, the terms-of-trade effect is negative, as shown in item 2".

b. Same as note *a* above, interchanging the United States with Japan.

c. This will be negative unless the terms-of-trade effect 2 in the U.S. column (which can be either positive or negative, depending on whether diversion occurs) is not only positive, but sufficiently strong to offset any U.S. terms-of-trade loss resulting from Japanese protection (item 2 in the Japan column).

d. This will be zero if the infant-industry benefits to the United States from its protection at Circle 3 are of the same order as the infant-industry benefits that the United States loses to Japan as a result of Japanese protection at Circle 5. There is no guarantee that these will cancel. If they do not, then the United States may realize some net gain or loss.

e. While this overall effect is almost certain to be negative, an exception could conceivably occur if the combined effect of both tariffs on the terms of trade and nurture of infants not only results in a benefit for the United States, but creates also a sufficiently strong benefit to offset the U.S. efficiency losses from both tariffs. (One reason that this is unlikely is the possibility of trade diversion, which would have a negative effect on the U.S. terms-of-trade.)

f. Same observation for Japan as appeared for the United States in note *c*, above.

g. Same observation for Japan as appeared for the United States in note *d*, above.

h. Same observation for Japan as was made for the United States in note *e*, above.

arrive at the *total* effect of *both* tariffs on *both* countries in the southeast block of Table 2-3. However we *can* get this southeast block by a horizontal (left to right) sumnation of the blocks along the bottom row, a calculation that tells us that both countries taken together unquestionably lose from both tariffs.[16]

- If we look ahead to W_G in Figure 3-2, we see that it is like W_E, except for one key difference. Whereas at W_E the trade conflict ends after one protective strike by each country, at W_G the trade conflict ends after the United States has 'got in' two strikes to Japan's one.[17] Since the effect of this extra U.S. protective strike[18] on Japan is negative, there is even greater assurance of an overall Japanese loss from this trade war; but since the effect of this extra U.S. strike on the United States itself is ambiguous, the negative sign for the United States at W_G remains tentative, just as it was at W_E.
- Let us now turn to the welfare outcomes along the bottom of Figure 2-2 (that is, W_D, W_F, W_H . . .) that result from a negotiated settlement. The longer the trade conflict continues — that is, the farther the two countries move to the right through protective strike and counter-strike before achieving a negotiated settlement — the higher the short-run dislocation costs incurred between the beginning of this trade conflict and its eventual negotiated end; moreover, the less likely it becomes that the two countries will be able to 'get all the toothpaste back into the tube', that is, to negotiate all the way back[19] to Circle 0. If they do not, and some of this newly introduced protection remains, then there will be a continuing welfare cost associated with the trade conflict.
- On the other hand, it is conceivable that as a result of this trade conflict, the two countries might come to a better understanding of the costs of protection and negotiate back, not just to Circle 0, but even further, by removing even more of their protection. For example, if the United States were able to negotiate a return to Circle 0, *plus* achieving a reduction in the Japanese trade barriers that initiated this conflict, then the United States would have 'won' in the sense of achieving a long-term benefit from its policy of aggressive reciprocity. (This benefit would, of course, have to be compared to its short-run costs incurred in the trade conflict.)

A Summary of the Effects If the United States Applies Aggressive Reciprocity to the Japanese

In Figure 2-3 we take a summary view of Figure 2-2. On the left, the United States initiates a policy of aggressive reciprocity. If the Japanese do not concede, and the United States makes good its threat, the result is the beginning of a trade conflict, which may escalate, as shown by the wide path that runs through the centre of Figure 2-3. The longer this conflict continues, the higher the costs for both countries. But such a conflict cannot continue to escalate indefinitely.[20] Sooner or later it must 'peter out', via one of the upward-sloping paths, at a higher level of protection for each country. Or else it must be terminated, via one of the downward-sloping paths, by some form of accommodation that returns the two countries at least part of the way back to the initial less-protected situation at Circle 0.

'Upward-Path' Outcomes in Figure 2-3

If the trade conflict peters out — as indeed it may, as countries wishing to terminate it phase it out with token responses — the resulting legacy of protection will be costly for both countries taken together, and is likely to be costly for each, as W_C, W_E, W_G, and so on, in Figure 2-2 indicate.

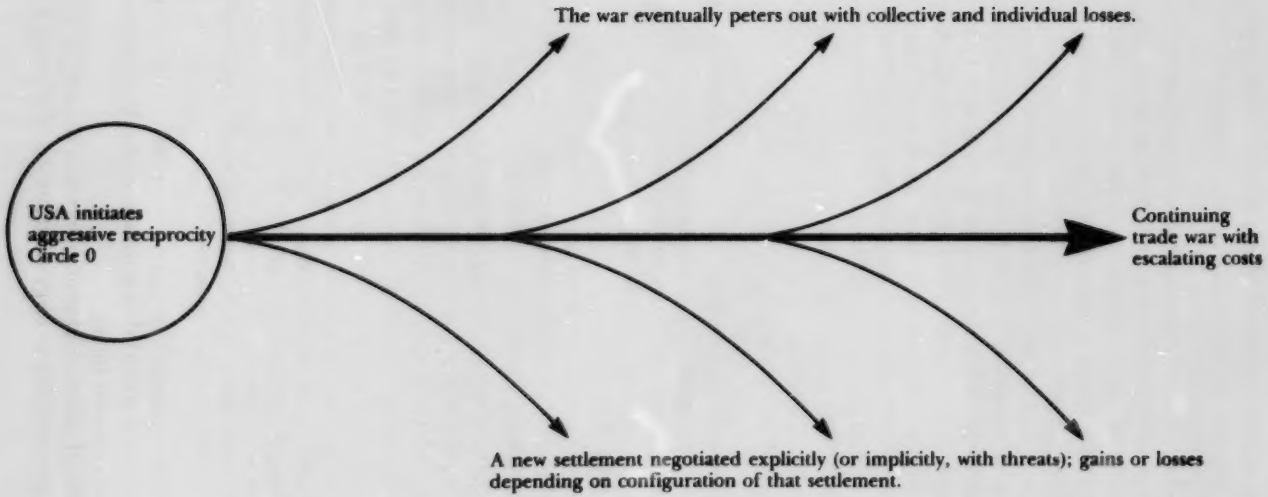
However, while unlikely, it is still *conceivable* that the United States could benefit, if all, or some extremely favourable combination, of the following conditions were to hold:

- If the U.S. efficiency losses at each stage were to be relatively small
- If the United States, with its larger market, were to dominate the terms of trade between the two countries. U.S. protection would then improve the U.S. terms of trade, with very little offsetting effect from any Japanese retaliation. Such a trade conflict might even turn out to provide a way by which the United States might achieve — or blunder into — an approximation of its optimal (welfare-increasing) tariff.

But even this second condition would fall far short of ensuring U.S. benefit for two reasons:

- Trade diversion to third countries would complicate the issue because it would throw doubt on the U.S. terms-of-trade benefit from its own tariff.
- Even if substantial trade diversion did *not* occur and the United States *were* able to improve its terms of trade in a conflict in which

Figure 2-3: *An Analysis of the Economics of Trade Conflicts (A Summary of Figure 2-2)*


The war eventually peters out with collective and individual losses.
USA initiates aggressive reciprocity Circle 0
Continuing trade war with escalating costs
A new settlement negotiated explicitly (or implicitly, with threats); gains or losses depending on configuration of that settlement.

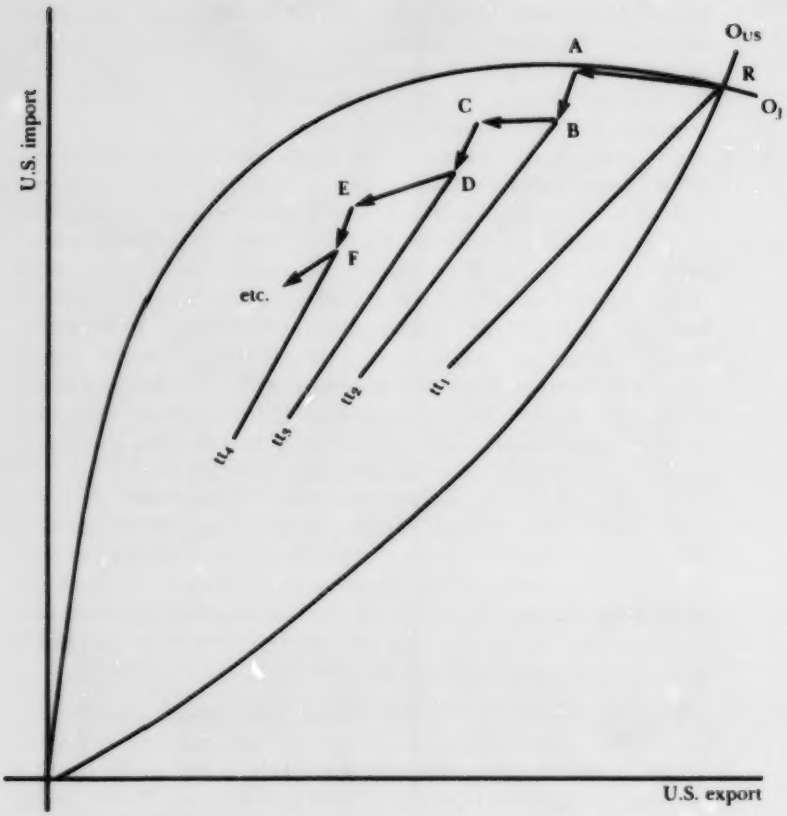
both countries were raising their tariffs, the shrinking U.S. gains from trade that resulted from the trade conflict might swamp any terms-of-trade benefit that the United States might achieve. This possibility is illustrated in Figure 2-4. After each U.S. protective thrust and Japanese counter-thrust, the U.S. terms of trade improve. (We move anti-clockwise from tt_1, to tt_2 to tt_3, and so on.) But as trade shrinks, the United States still suffers a welfare loss *despite* its terms-of-trade improvement.

- Another way in which the United States could conceivably benefit from an upward-path solution in Figure 2-3 is to gain sufficient 'infant' benefits in an industry that generates external benefits, such as a high-tech industry that adds to the future U.S. endowment of 'technological resources'. Whatever chance there is of this may be increased if the eventual upward-sloping outcome is Circle 4: that is, if the Japanese do not retaliate against the initial U.S. protection at Circle 3. Even if the Japanese do retaliate, and there is a trade conflict in which producers in both Japan and the United States lose part of their market in the other country (that is, tend to be backed, at least to some degree, into their own domestic market), U.S. producers may have an advantage: in the much larger U.S. market, they may be less likely than the Japanese to incur substantial losses in economies of market size, including economies of scale. Consequently, U.S. producers may be able to capture sales at Japanese expense in third markets, along with the associated future profits, external benefits, and perhaps even monopoly rents that the Japanese were previously deriving from sales in these markets.[21]

While it is *conceivable* that the United States could gain from a trade conflict that peters out in an upward-path outcome in Figure 2-3, this result becomes less and less likely if the trade conflict continues through several stages: that is, if it moves the countries farther and farther to the right in Figure 2-2, with efficiency losses piling up in each stage.

Moreover, it is important to remember that a trade conflict between two of the world's key actors on the trading stage could seriously weaken the GATT system, thus risking damage to the gains from multilateral world trade. (It can be argued, indeed, that even without such a trade conflict, the GATT system is already showing serious signs of weakness.) Thus any major bilateral conflict between the United States and Japan would have to be assessed, not only in terms of its direct damage to the participants, but also in terms of the precedent it would set, and the invitation it would provide to other countries to do likewise.

Figure 2-4: *Welfare Loss for U.S.A., Despite Continuing Terms-of-Trade Improvement*



In a trade conflict, the United States may be able to keep on improving its terms of trade ($tt_4 > tt_3 > tt_2 > tt_1$), even though the Japanese have some terms-of-trade influence and retaliate. But despite this terms-of-trade improvement, the United States may still suffer a welfare loss.

To see why this is so, note that the United States, with its larger market and greater influence over the terms of trade, has a less bowed offer curve 0_{US} than does Japan. Initially, an optimal U.S. tariff shifts equilibrium from R to A, while Japanese retaliation then shifts equilibrium from A to B. With this 'first round' complete, the U.S. terms of trade have improved from tt_1 to tt_2, and continue to improve (to tt_3, tt_4, and so on) through succeeding rounds. But because of reduced trade, both Japan and the United States suffer a welfare loss.

In short, even though there are *possibilities* that prevent any categorical conclusion, it nevertheless seems likely that an upward-path outcome in Figure 2-3 would damage the United States; it would do so directly by shrinking bilateral U.S. trade with Japan, and indirectly by risking damage to the GATT and the multilateral trading system. Moreover, it is even more likely that such an outcome would damage Japan. With its smaller size, for example, Japan is far less able than the United States to acquire *any* terms-of-trade benefit from a trade war, let alone a terms-of-trade benefit sufficient to offset its efficiency losses.

'Downward-Path' Outcomes in Figure 2-3

These are the outcomes arrived at through negotiation. If such negotiations return Japan and the United States to Circle 0, then the conflict ends with both countries incurring only the short-run dislocation costs that come from temporary protection. But if the negotiated solution does not eliminate *all* of the protection introduced during the trade conflict, then there will be long-run damage, with the assessment of this damage depending on the amount of protection that remains. Once the remaining protection is specified, the assessment of damage would follow the approach used above in evaluating W_C, W_E, and so on.

Of course, it is possible that the negotiated settlement not only eliminates the protection introduced in this trade conflict, but goes beyond this to remove some previously existing protection, as well: perhaps the offending Japanese barriers that led to the U.S. policy of aggressive reciprocity in the first place. Because this outcome would benefit the United States,[22] it provides possible justification for aggressive reciprocity: impose, or threaten to impose, your own protection so that you can then sacrifice it to negotiate down partner's protection. But the dangerous feature of this strategy is that domestic political support for the initial protective move may come from groups that are not interested in protection as a bargaining device for getting to freer trade, but are, instead, interested in protection for its own sake and have no intention of bargaining that protection away later. Thus, while the support of such groups may make it politically feasible to achieve the first stage in this strategy, namely, the introduction of own protection, the second stage, that of sacrificing this protection to negotiate down partner's protection, may not be feasible because at this point the support of these groups may disappear. This creates the grave risk that even if a reciprocity policy is designed by its proponents to

liberalize trade, it may be aborted half way and may lead, instead, to greater protection.

Evaluating a High-Risk Policy: Its Expected Value

In the analysis of Figure 2-2, we have developed a general technique for analysing the economics of any form of trade conflict. The particular example we have considered is a conflict initiated by a U.S. policy of aggressive reciprocity, initiated in response to Japanese protection. Our argument so far implies that aggressive reciprocity will be beneficial to the United States if there is a large enough probability that it will result in a 'downward-path' negotiated outcome, such as W_A, W_D, W_F, or W_H in Figure 2-2, *and* if this outcome results in more liberalized trade than originally existed at Circle 0. Otherwise — if, for example, the trade conflict eventually peters out, via an upward path, on a higher plateau of protection — then this conflict is likely to damage the United States. The question is: How do we compare these favourable and unfavourable possibilities? The answer is that they will implicitly be compared, that is, traded off, if we calculate the 'expected value' of the policy of aggressive reciprocity. To calculate this, it is necessary to guess intelligently at the probability that each of the paths in Figure 3-2 will be followed. (We shall have more to say later on this problem of guessing.) Then we can calculate, for example, the probability of arriving at W_D as:

$$P_3P_6P_8 \qquad \text{(Statement 3)},$$

where we define probabilities as before; for example, P_6 represents the conditional probability that, faced with U.S. protection at Circle 3, the Japanese will follow Path 6. Similarly, the probability of arriving at W_F is:

$$P_3P_5P_{11}P_{13} + P_3P_6P_7P_{11}P_{13} = P_3(P_5 + P_6P_7)P_{11}P_{13} \quad \text{(Equation 4)}.$$

Notice that in this evaluation, we just move left to right, following all the paths that lead to W_F. We also note certain restrictions:

(a) Any probability P_j must be between 0 and 1, that is,

$$0 \leq P_j \leq 1 \qquad \text{(Equation 5)}.$$

(b) The sum of the probabilities of all the paths emerging from the right of any circle must equal 1; for example,

$$\begin{aligned} P_1 + P_2 + P_3 &= 1 \\ P_4 + P_5 + P_6 &= 1 \\ P_7 + P_8 &= 1 \end{aligned} \qquad \text{(Equation 6)}.$$

(c) Each probability is independent of the previous path the two countries may have followed. For example:

P_{13} (the probability that negotiation at Circle 11 will succeed) is the same whether the countries have arrived at this point via Paths 6 and 7 (a previous unsuccessful negotiation) or via Path 5 (no previous negotiation even attempted). If this is not so, then the analysis would have to be appropriately modified.

To calculate the expected value E of aggressive reciprocity, we multiply the value of each outcome, like W_D, with the probability of arriving at that outcome, as given in Statement 3. Then we sum over all outcomes as follows:

$$E = P_1W_A + P_2W_B + P_3P_4W_C + P_3P_6P_8W_D + (P_3P_5P_{11}P_{13} + P_3P_6P_7P_{11}P_{13})\,W_F \ldots \quad \text{(Equation 7).}$$

The decision on whether or not aggressive reciprocity should be undertaken depends on whether its expected value E is calculated to be positive or negative.

Obviously, in evaluating this policy, the most crucial probabilities are those on the left, that is, P_1, P_2 and P_3, because one of these appears in every single term in evaluating E in Equation 7. As a simple illustration, if P_1 is close enough to 1, then a favourable expected value is ensured for the United States and for both countries jointly.[23] On the other hand, the farther to the right a probability appears in this diagram, the less important it becomes. For example, if P_{14} is close to 1, it is far less important; we may never actually get far enough to the right in this diagram even to encounter it.

This approach could easily be modified. For example, risk aversion could be incorporated; or restriction (c), above, could be relaxed by explicitly recognizing that P_{13} may be different if the two countries have already been involved in a failed negotiation, that is, if they have followed Paths 6 and 7, rather than Path 5. The difficulty in applying this model, of course, is not a theoretical one, but rather the problem of specifying numerical values for the W's and P's. While we have specified only whether the W's are positive or negative, more ambitious numerical calculations would have to be undertaken along the lines of previous studies that have numerically specified the cost, for example, of textile protection to Canada as a specific percentage of the Gross National Product (GNP). Moreover, in making its decision, the United States has only to estimate *one* of the three welfare effects. For example, for W_C, it needs only to evaluate the effect on the welfare of the United States, but not on

Japan nor on both countries together. Moreover, the United States has to estimate only half of the P's: those, that is, that relate to Japanese decisions. Presumably, it knows the P's that relate to its own decisions. For example, the United States presumably knows how it would react if it were to arrive at Circle 5: that is, it knows P_9, P_{10} and P_{11}.[24]

The obvious way of numerically specifying the Japanese P's would be to get betting odds, that is, subjective probabilities, from experts most knowledgeable about the ways in which Japanese political decisions and trade policy are made. The problem is not unlike that faced by the military: in either case, informed guesses are required as to how the other party will react to various hypothetical situations. Clearly, there is nothing precise about this approach. But there is no obvious way of avoiding it if sensible decisions are to be reached. Moreover, the United States need not estimate all of the Japanese P's, since once some of these have been specified, others must follow; for example, once P_4 and P_6 have been specified, P_5 is determined by Equation 6.

Notes

1. For detail on these bills, see W.R. Cline, *"Reciprocity": A New Approach to World Trade Policy?*, a source drawn on heavily in this volume.
2. Cline, *"Reciprocity"*.
3. Natural resources and, to a lesser degree, labour may be viewed as endowed factors, whereas capital has always been viewed as a created factor. Thus, to some degree, one can view the creation of technological capacity in the traditional way that we have viewed the creation of capital. There is obviously a very large overlap in capital and technological capacity, with much of human capital, in particular, lying in the intersection between the two. But it is important to distinguish between capital and technology for two reasons:
   - The dramatic economic changes which are now occurring cannot be explained without emphasizing technology.
   - In countries like the Soviet Union, the difference between these two factors is very important. While there has been a great deal of capital investment, Soviet technology has been very disappointing, except in a few highly visible sectors.
4. The view that, relatively speaking, Japan is a highly protected economy is disputed in Cline, *"Reciprocity"* and in G.R. Saxonhouse, "The Micro- and Macroeconomics of Foreign Sales to Japan".
5. The term 'infant protection' is here used in a broad sense. Traditionally, such protection was designed to nurture an infant that might not otherwise survive competition from *existing* producers in other coun-

tries. Here it can mean this, *or* it can refer to the nurture of an infant to ensure that it survives competition from *simultaneously* emerging (or even lagged) infants elsewhere. When we speak of the latter sort of infant protection, we include not only import barriers, but also domestic or export subsidies.

6. Why do such future profits not lead to the *unsubsidized* development of this activity? The traditional answer has been the failure of capital markets to provide the necessary funds up front.
7. See C.F. Bergsten and W.R. Cline, *Trade Policy in the 1980s*, including, in particular, the paper by J. Diebold, "The Information Technology Industries: A Case Study of High Technology Trade".
8. P. Krugman, "New Theories of Trade Among Industrial Countries", p. 345.
9. Cline, "*Reciprocity*".
10. See W.R. Cline (ed.), *Trade Policy in the 1980s*, p. 10 and W.R. Cline, "Exports of Manufacturers from Developing Countries: Performance and Prospects for Market Access".
11. To conform to the literature, we use the term 'welfare' here, but only in a loose sense. By a 'welfare gain' we mean an efficiency gain where the money benefits to the winners exceed the money losses to the losers. Strictly speaking, translating this into a welfare gain requires a weak assumption about the welfare neutrality of the redistribution of income that takes place.
12. This table, in turn, is based on the Appendix.
13. It is not entirely clear that a U.S. administration which, in threatening the Japanese, has publicized the alleged unfairness of Japanese trade barriers, will be able completely to avoid counter action if the Japanese do not respond.
14. This theory is developed in R.J. Wonnacott, "The Theory of Trade Discrimination".
15. It is possible that after failed negotiations, the Japanese may do nothing; that is, there should be a path from Circle 6 to Circle 4. To keep this diagram as simple as possible, this and other paths that would add further complications have not been explicitly included.
16. The reason for this strong conclusion is that both countries, taken together, lose from *each* tariff. This conclusion has already been derived in the case of the U.S. tariff in Table 2-2. It is further strengthened by the negative effects of any trade diversion that may occur.
17. The apparent 'unfairness' of this to the Japanese may make it unlikely that they will accept this outcome. But their acceptance is not impossible: they may view such a non-response as their only way of ending a trade conflict that has become extremely costly for them. Remember, Americans may not view this outcome at W_G as unfair to the Japanese at all; instead, they may view it as two rounds of U.S. protection to

offset one round of Japanese protection *plus* the original Japanese protection that set off this trade conflict in the first place. This different assessment by the United States may lead it to stand ready to counter any further Japanese protection by a new U.S. protective thrust. And if the Japanese realize this, they may decide to terminate the trade conflict at W_G.

18. The effects of this second U.S. strike can be visualized as another column in Table 2-3, exactly the same as the U.S. column, labelled "Effects of U.S. Protection at Circle 3".

19. As an extreme case, the high protection introduced during the 1930s took a long time to remove after World War II.

20. Obviously, in the extreme, it cannot escalate beyond the point at which it has effectively terminated the economic interchange between the two countries.

21. See J. Brander and B. Spencer, "Export Subsidies and International Market Share".

22. As already noted, this result would be beneficial only if gross benefits, realized from reducing the Japanese trade barriers that triggered the U.S. action at Square 0, are sufficient to more-than-offset the short-run dislocation costs incurred by the United States during the trade conflict. And the farther the downward arrow is to the right (that is to say, the longer the trade conflict lasts before it is resolved), the greater these dislocation costs become.

23. A favourable *expected value*, but *not necessarily* a favourable outcome if this policy is applied, since P_1 is not exactly 1.

24. Subject, of course, to our reservation in note 13, above.

3: *Implications of Aggressive Reciprocity for Canada*

Implications for Canada If the United States Applies Aggressive Reciprocity to Japan

If the United States applies its policy of aggressive reciprocity to Japan, and this action results in increased U.S. protection against Japan, then Canada will benefit for two reasons:

- Some U.S. purchases will be diverted from Japan to Canada, and Canada will benefit from increased exports.[1] This is not an entirely indisputable conclusion, since there would be indirect costs to Canada from the lowered income and higher costs in Japan and the United States, which might result from a trade conflict between the two countries. Moreover, there is the whole question of how much damage a United States-Japan trade conflict would do to our present GATT system and, with it, the world trade on which Canada so heavily depends.
- Canada would benefit from this new U.S. policy if it were to replace the existing U.S. policy of non-discriminatory safeguard protection. Even though such protection may be aimed at only one or a few trading partners, it has been applied — for example, in 1971 — to all U.S. dutiable imports from all its trading partners. Because Canada is the United States' largest trading partner, such a U.S. policy of non-discriminatory protection risks damaging Canada more than the country or counries at which it is aimed.

Implications If the United States Applies Aggressive Reciprocity to Canada

In this case the effect on Canada would be entirely different. A description of all the possible effects would require an analysis similar to Figure 2-2, with Canada replacing Japan. In particular, when the United States threatened its initial 'reciprocity' trade restriction (at Circle 0), Canada would face a choice. It could either give up the protective tariffs, export subsidies, and/or tax policies that had triggered the U.S. threat or face possible U.S. action against Canadian exports.

If we do give up these forms of protection, that is, if we follow Path 1, then in *economic* terms, Canada may benefit or lose, depending on whether these policies have been benefiting Canada or not. If the threat of U.S. reciprocity forces us to abandon prematurely an infant 'winner' about to deliver on its promise of internal profit and external benefit, then Canada could lose. On the other hand, Canada could gain if the U.S. policy 'saves us from ourselves', that is, saves us, for example, from continuing to back a 'loser' that we consider a 'winner' or, more broadly, saves us from continuing to back those groups in Canada that have been able, at national cost, to promote their own self-interest through protection and subsidies.

Alternatively, if Canada were to ignore the U.S. threat and the United States did introduce these new trade restrictions (Path 3), the results would unquestionably be damaging for Canada. Even if the conflict ended here (Path 4), we would face all the costs cited in Table 2-2 (remembering that Canada now replaces Japan). Moreover, because Canada has a relatively small economy, the standard efficiency losses might be augmented by a loss of substantial economies of scale as a result of a reduced export market.

However, an even more substantial concern is that if Canada were to retaliate (Path 5), and an escalating trade war between the two countries were to result, Canada could be damaged even more. Because the Canada-United States terms of trade in manufactures are dominated by the United States, any Canadian trade restrictions would have little effect on our terms of trade; but U.S. trade restrictions would result in a U.S. terms-of-trade benefit, that is, in a Canadian terms-of-trade loss. Thus, with each round of protective thrust and counter-thrust by the two countries in a trade war, Canada's terms of trade would deteriorate. The result would be like the terms-of-trade deterioration for Japan in Figure 2-4. And increasingly, economies of scale would be lost because exports would be reduced further and further as the trade war progressed. Finally, there would also be the familiar efficiency losses in production and consumption that would result from Canadian trade barriers, as well

as the possible cost of a more restricted variety of products available to Canadian consumers.

If the Canadian trade restriction that 'keeps the trade war going' is an export subsidy, then the futility of this measure is transparent, especially if this export subsidy just offsets a new U.S. tariff. The Canadian export industry would be left unaffected, since the export subsidy it would receive from the Canadian government would offset the U.S. tariff it would have to pay. But there would be a large loss incurred by Canada, since the Canadian taxpayer, via the Canadian exporting firm, would be paying a duty to the United States that did not exist before.

In summing up the effects of U.S. aggressive reciprocity on Canada, the key question is: Who is the U.S. target? If the United States is using this policy on Japan, Canada may well benefit by 'picking up some of the broken pieces of United States-Japan trade'. However, it is not clear how this benefit might compare with Canada's indirect losses because of the damage that a United States-Japan trade conflict would inflict on the two participants and the world trading system. On the other hand, if Canada is the target, then the effects on Canadian export trade will unquestionably be damaging. In addition to the incursions by the United States on Canadian sovereignty — incursions which to some degree are inevitable in any important trading relationship, but which are now controlled, at least to some degree, by the 'due process' of the General Agreement on Tariffs and Trade (GATT) — there would be substantial Canadian losses from reduced access to the U.S. market. These losses would become more and more serious, were this dispute to escalate into a trade war.

Concluding Remarks

Obviously, we have only scratched the surface of our topic. In broadly describing the problem of trade wars in Figure 2-2, both in terms of how they affect participants and in terms of how they affect third countries, we have encountered issues that it has been impossible to deal with in adequate detail. However, our hope has been to provide a focus for future thinking about trade wars and to clarify how damaging they may be.

We now offer some broad observations on some of the pressures on our collective trading system that may become increasingly important in the future. This will allow us to return once again to the U.S. proposal for aggressive reciprocity and to examine it from a different point of view.

Notes

1. The principle that Canada will benefit directly from a trade war between two other countries can be upset if these countries attack each other with export subsidies rather than import barriers. For example, if the United States retaliates against the European Economic Community's (EEC's) agricultural policy by imposing tariffs on EEC manufactures, Canada stands to benefit from increased manufactured exports to the United States. But if the United States retaliates by subsidizing its sales of agricultural products in third markets, then Canada stands to *lose* from reduced agricultural exports to these markets.

4: *The Future of the World Trading System: Some Speculation*

The Collective versus the Individual Interest

Let us now return to our earlier observation that the General Agreement on Tariffs and Trade (GATT) and, in particular, the Kennedy and Tokyo Rounds, which have reduced trade barriers, have been in the *collective* interest of GATT-member countries. At the same time, each participating country has judged, from time to time, that it is in its *individual interest* to cheat on GATT agreements, that is, to *increase* its trade barriers. To a substantial degree, this judgement has been based on each country's failure to understand that its own protection damages itself, even if it 'gets away with it' without foreign retaliation. However, this conclusion that protection damages a country, while reasonably well founded, may no longer be as strong as was previously supposed, because of the possibility that protection may provide special research and development (R&D) 'infant benefits' or other benefits.[1]

This combination of collective benefits from an agreement, along with imagined, or perhaps even real, individual benefits from 'cheating' that avoids retaliation, suggests a trade-policy model with strong historical explanatory power. Each country pursues a strategy of engaging in collective negotiations such as the Kennedy and Tokyo Rounds, in order to commit its trading partners to guaranteeing it freer access to their markets,[2] while only reluctantly yielding freer access to is *own*. Moreover, once the agreement is sealed, each country may engage in surreptitious attempts to 'cheat'

by restricting access to its own market. The major limitation to this form of covert protectionism would seem to be the necessity to avoid so obvious a violation of the collective agreement that the agreement itself would be jeopardized and/or that an important partner would retaliate. There seems to be a partial moratorium on such surreptitious cheating during periods in which collective agreements are being negotiated because it is during such periods that the process of collective agreement is most sensitive to damaging unilateral action.

This incentive to protect as much as possible without appearing to do so — and, in particular, without obviously violating the GATT — may be important in explaining why tariffs have been replaced by NTBs which are often obscure, difficult to detect and, even if detected, difficult to assess. Moreover, the combination of collective interest in a collective agreement, plus the incentive by each participant to cheat, up to the point where it puts the collective agreement at risk, suggests the traditional cartel model, in which the key question is: Will the whole agreement come apart? While, in my view, this cartel analogy provides interesting insights, there are several respects in which our trading system *differs* from a classic cartel:

- The global welfare implications are turned upside down. In the case of a cartel, it is in the *global* interest for participants to cheat and, in the process, destroy the agreement. But in the case of our collective trade agreements, it is in the global interest for cheating to be *prevented*, and the agreement to be sustained. The reason, of course, is that our trade agreements have global coverage and are in the global interest,[3] whereas a cartel that includes only a subset of parties is not in the global interest; instead, a cartel is a means for this subset of parties to transfer income from the global interest to itself.
- While cheating that a particular member can get away with and that does not damage the collective agreement[4] is in that member's interest in a standard cartel, such cheating may or may not be in an individual country's interest in a collective trade agreement. On the one hand, for the Japanese, who seem more able than most countries to 'pick winners',[5] protective targeting attempts may yield net benefits. But beware: the fact that a protected industry seems to be a winner — that is, that it is surviving, or even thriving, on account of protection — does not mean that protection is beneficial from the national point of view; the damage to other groups may exceed the benefits to the protected industry.

On the other hand, when it comes to countries with a proclivity for picking 'losers', it is very difficult to argue that they gain from

cheating. Instead, their cheating (that is, their protection of losers) can be viewed as a degree of freedom that it would be better for these countries not to have, even from the point of view of their own interests.

- In a cartel, cheating is done in only a very few ways; for example, it is done by selling beyond a geographically defined market, or by cutting an agreed-to price, perhaps by surreptitious discounting. However, in a trade agreement, there are many ways to cheat because of a multiplicity of non-tariff barriers (NTBs).
- In a cartel where there is price cheating, the offending member may be disciplined by one or more of the other cartel members cutting the price on the same product. But a cheater in our trading system often cannot be disciplined by retaliatory price cuts in the same product. For example, if the Japanese impose restrictions on American oranges, they cannot be disciplined by a U.S. restriction on Japanese oranges, since Japan has no exports of oranges to lose.
- In one important sense, however, it may be easier to impose discipline over the trading system than over a cartel. In a trading system, *bilateral* action against an offender is possible. This is true even in the essentially multilateral forum of the GATT where, if the United States can sustain a complaint against Japan, it can take action against the Japanese. Compare this situation to that obtaining in a cartel, where a large firm's cut in price, which constitutes its way of taking action against a price cheater, is, by its very nature, a *multilateral* action because it affects third parties in the same way that it affects the offender.
- This ability of other participants in a trade agreement to 'target-in specifically' on a cheating country means that such a country faces greater risks in cheating and is accordingly deterred, to some degree, from doing so. This is one encouraging reason why a trading system may be more stable and long lasting than a cartel.

Having noted these differences between a cartel and an international trading system, we conclude by emphasizing the major similarities. Both require, first, a multilateral agreement binding all participants and, secondly, some way of disciplining the individual participants to prevent them from cheating, since, as more and more participants join in, cheating destroys the collective agreement. With a few notable exceptions, the typical cartel does not solve the second problem.[6] In our international trading system, this problem has been solved by the GATT, but only in an imperfect way. The key question is: Will the GATT continue to provide at least an imperfect means of control?

The GATT as a Mechanism for Controlling International Trade

In the monetary domain, the International Monetary Fund (IMF) is an organization that successfully imposes a great deal of discipline over its members because it has a 'big stick': the money it allocates in its rescue efforts. The GATT has never had this sort of big stick,[7] and this explains its relative lack of power in enforcing discipline over its members.

It can be argued that the GATT has never been as strong as has been sometimes supposed. There have been long-standing exceptions to its basic principles: its exemption of agricultural goods; the preferences given less-developed-country (LDC) exports; and the free-trade-area/customs-unions exception required by the United States to allow a proposed free-trade area with Canada, but ironically taken up later by the Europeans in the formation of the European Economic Community (EEC). In addition, the GATT's rules are frequently overriden by domestic laws. While governments that do not wish to use protective trade barriers use the GATT to resist domestic political pressure, and governments with a moderate desire to protect are constrained by the GATT, governments that *do* strongly wish to protect often go ahead and do so, regardless of the GATT.

The GATT's great strength is that it constitutes a mutual agreement that provides something like a moral code: a semi-voluntary set of rules that countries with a reasonable degree of trust in one another can follow to achieve a collective interest. Its weakness is that this trust may erode under the pressure of countries pursuing what they perceive to be their own domestic interests. In looking to the future, it seems likely that there will be continued public reaffirmation by the GATT-member countries of the benefits of freer trade. These countries will make this reaffirmation in recognition of their collective interest and, in particular, their interest in keeping foreign markets open to their own exports. At the same time, these countries, in pursuit of what they perceive to be their individual interests, may well go off and try surreptitiously to protect themselves against imports.

The question, of course, is whether or not this cheating can be kept under reasonable control, perhaps by further Rounds which impose stricter controls on NTBs. The fear is that this cheating will go out of control, and that, with the sense of mutual trust and collective interest eroded, countries — especially large countries — will increasingly take the law into their own hands. The question, then, becomes whether this results in a chaotic 1930s-style system

that borders on anarchy, or whether a new form of control emerges. For example, the United States might try to monitor its various bilateral relationships with a policy of reciprocity. Indeed, since access to the U.S. market offers the largest available single stick to discipline trade[8]—just as the funds administered by the IMF represent the big stick in our attempts to achieve monetary discipline—one might speculate as to whether the United States, in monitoring its own bilateral relationships through a policy of reciprocity, might provide some beneficial policing of a system that might otherwise drift deeper and deeper into protection.

Other countries would undoubtedly judge such U.S. policing of the international trade system to be inferior to an effective monitoring through GATT. But if monitoring by the GATT is no longer feasible, and if some sort of policing of the system devolves, by default, on the United States, the questions arise: How can U.S. reciprocity be made less offensive to its trading partners? In particular, what can be done to ensure that this policy would be used to keep the *system liberal*, rather than as a device to make *America protectionist*? What can be done to ensure that the policy will not be used by the United States in a self-serving way that would erode the sovereignty of its trading partners, and/or set off a trade war?

How Could U.S. Reciprocity be Made Less Offensive?

Before attempting to provide a preliminary answer to this question, we re-emphasize that U.S. reciprocity should not even be considered as a monitoring device unless the GATT has become ineffective. But if that misfortune does occur, and consequently the United States is considering reciprocity, then America's trading partners should, at the very minimum, strongly seek the following provisions to ensure that this policy be used in the collective interest, rather than in the interests of some special, domestic U.S. pressure group. To be concrete in the discussion that follows, we shall suppose that the United States has identified what it believes to be a new form of Japanese protection, and is considering a counter measure.

Of the provisions that follow, the first would require no substantial change; instead it would simply ensure that some of the existing GATT mechanisms continue to be used.

- Any U.S. action against the Japanese should require a prior judgement against them by the sort of GATT-panel and -council adjudication machinery that exists today. This requirement would reduce the risk of a self-serving exercise of trading power

by the United States and thus maintain some of the protection GATT now provides to small countries in a world of trading giants. This requirement would also reduce the risk that a U.S. action would trigger a trade conflict: since the Japanese would face a GATT-approved action by the United States, they would be less likely to retaliate.

The rest of the provisions would involve changes:

- Since delaying U.S. action until a GATT decision is reached may reduce the effectiveness of this policy, the United States might limit the time it waits for a GATT decision to six months or a year. During this specified period, the United States would await and abide by any GATT decision that is handed down; but after this time had elapsed, the United States would proceed against Japan.

On this timing recommendation, there are pros and cons. The disadvantages are, first, that a decision taken in haste may be an inferior decision; and, secondly, that limiting the 'cooling off' period of GATT adjudication might make it less likely that the conflicting parties would arrive at a negotiated settlement before the GATT decision is brought down.

On the other hand, the argument in favour of this time limit is that it might strengthen the GATT dispute mechanism by preventing the extended delays that contribute to the present perceived weakness of the GATT. In any case, this time limit would not be a severe constraint, since many decisions — for example, the Hong King complaint against the French residual quotas in 1983 — have been made well within this time limit. Moreover, such a time limit might force a GATT reform that could speed up the final decison without adding haste to the actual deliberations. For example, the time necessary to set up a panel might be dramatically reduced, were the GATT to employ experts whose first commitment would be to act as panelists; they could then be called upon without delay.

- To design this policy further to ensure that the power exercised by the United States will not be used in a protectionist way, the trade barrier that the United States imposes against the Japanese should be imposed on a product *not* of a class or kind made in the United States, such as, for example, videocassette recorders. There is not a huge list of goods in this category; but there need not be. In the selection of a particular U.S. item to be protected, a special attempt should be made to find goods with negative externalities so that the increase in the price to U.S. users would be welfare-increasing rather than -decreasing. In other words, select a good

on which the U.S. trade restriction would 'kill two birds with one stone' rather than generate unfavourable domestic side effects. An example might have been motorcycles, had the last U.S. producer, Harley Davidson, not been rescued by protection in 1983. Moreover, as at present, the United States should not announce, during the period of waiting for a GATT judgement, where its retaliation will fall. This should help to mobilize political pressure from all other sectors within Japan against the sector which is the source of the original U.S. complaint.

The object of this provision is to prevent U.S. trade barriers from being viewed as a 'fair trade' attempt to compensate the damaged U.S. sector. The provision would keep this policy from becoming entangled in the protectionism that is almost inevitably associated with attempts to achieve fair trade; it would thus free this policy for exclusive use as a weapon against foreign trade restrictions.

U.S. industry must be adequately warned that the particular item of U.S. protection will be 'removed without notice in the near future'. This warning is essential to prevent the development of a new infant industry behind this protection, an infant that the government might then have great political difficulty in disowning.

- In applying a reciprocity policy, the United States should seek relief in entering the Japanese market, not just for its own exports, but for the exports of all other countries as well. This would be a way of maintaining some semblance of a non-discriminatory most-favoured-nation (MFN) system.

While U.S. insistence that the Japanese reduction in trade barriers be non-discriminatory would provide third countries like Canada with some form of assurance, it would be far from foolproof. The reason is that the United States would be seeking Japanese import liberalization in the products that the United States, but not Canada, trades heavily. (Often the two coincide, but not always.) This leaves unanswered the question of how Canada might ensure its access to the Japanese market in the items with which we are concerned, but the United States is not. This is a basic reason why an effective GATT, in its monitoring of all trade, must be judged far superior, from a Canadian point of view.

- Congress should pass a new Trade Act that would bind it to accept the U.S. Administration's decisions on trade barriers over, say, a five-year period. This legislation would be similar to the authority granted by Congress to the Administration to negotiate the Kennedy and Tokyo Rounds. The Act would ensure that once a U.S.

trade barrier imposed in a reciprocity action has successfully achieved a reduction in a foreign trade barrier, the U.S. barrier could then be removed. This action could not be blocked by a protectionist Congress that had changed its mind.

Conclusions

The last section of this report that deals with the ways in which U.S. reciprocity might be reformed is not a polished, finished proposal; it is more of a search than a discovery. It may be viewed as a preliminary discussion of a policy question that it may still be premature to raise, but may be important to think about in advance.

The reason it may become an important issue is that there is a major problem with the GATT: it has become less effective in curbing protectionism, especially during periods between the major rounds of trade liberalization. Moreover, as we have reduced the tariffs that are relatively easy to deal with, they have been replaced by NTBs that are much more difficult to detect and remove. It is almost as though, in curing the tariff disease, we have reduced our immunity against the more virulent form of protectionism represented by NTBs.

The less effective the GATT becomes, the more likely it is that a new form of policing will emerge. The most likely form would be for the United States to exercise some control over the trade barriers of other countries by using the single 'biggest stick' in the system: access to the U.S. market. The use of this stick has already surfaced in the form of the recent reciprocity proposals. These were motivated by the weakness of the GATT mechanism in controlling foreign protection and by the U.S. recession, with the high value of the U.S. dollar performing a key role. Even if, as the recession fades, the demands for reciprocity become weaker, they will remain below the surface and are likely to reappear during the next recession, and/or if the GATT is perceived to have become ineffective in controlling foreign protection. Those in the United States seeking an open world trading system and all of America's trading partners should start thinking now of contingency measures to ensure that if it comes to this, any U.S. exercise of 'reciprocity power' is tied, through the GATT, to some form of collective decision making, and is not seized by protectionist interests in the United States.

An analogy may be useful: If, in the face of a drift towards anarchy, a new policeman appears, how do we police *him* to prevent him from using his role in a self-serving way? How do we ensure

that such a policeman — the United Sates — is limited to one action: flipping the prison lock or, more precisely, flipping the lock that keeps an offender, not *in* prison, but instead *out of* the rich U.S. market? How do we prevent the policeman from becoming judge and jury as well?

While we should begin to prepare ourselves to articulate our own interests if and when the United States seriously turns to reciprocity, we should recognize that even a reformed U.S. reciprocity policy would be, at most, a second, third, or n^{th} best solution. The GATT, even in its present form, is much superior; and a strengthened GATT would be far superior again. No matter how reciprocity may be reformed, there is little hope that it would be completely invulnerable to U.S. protectionist abuses. It would still raise problems of sovereignty for America's trading partners; it would still, to some degree, leave small countries like Canada out in the cold; and it would still risk setting off a trade war. On this last issue, indeed, there is a substantial risk that any U.S. initiative to monitor the system would be met by European retaliation, perhaps as much for political as for economic reasons. Moreover, all these problems would arise even if the United States were to apply a modified reciprocity that included all the reforms detailed here. And can such a U.S. action be assumed? In particular, how can we be sure that a U.S. Administration would impose import controls on a good *not* made in the United States when it would be facing so much domestic voting pressure to impose controls on a good that *is* made in the United States? Finally, this policy would require that other countries show considerable collective trust in the United States. And the United States still has a long way to go in establishing its own credibility. For example, U.S. Domestic International Sales Corporations (DISCs) were found in violation of the GATT in the mid-1970s, and that issue still has not been completely resolved, although a solution is now apparently 'in the works'.

For these reasons, it is my view that in any debate on how U.S. reciprocity should be designed, we should keep firmly in mind that even a reformed reciprocity would be nowhere near as effective a means of keeping world-wide protection under control as would a strengthened GATT.

Notes

1. Other conceivable benefits are cited in a companion volume: R.J. Wonnacott, *Selected New Developments in International Trade Theory.*

2. There are other reasons why any government should seek a collective agreement such as GATT. In dealing with a domestic interest group seeking protection (which a government might otherwise be unable, for political reasons, to resist), that government can express its sympathy while judging against this protection because it 'violates GATT'. As Richard Blackhurst, on p. 369 of "The Twilight of Domestic Economic Policies", has noted:

> . . . general international rules are at least as useful in protecting a government from domestic interest groups as they are in protecting it from abuses by other governments. It is no paradox that the observance of general rules *increases* a government's freedom and ability to pursue genuine national interests.

In particular, the GATT's dispute procedure, with its admitted delays, may save *both* disputing countries from their own domestic protectionist pressure, for the following two reasons:

- The complaining government can resist its own protectionist pressure groups by telling them that it has already undertaken the appropriate action by lodging a complaint in the GATT.
- The government complained against may be 'forced' by a decision of the GATT panel and council to roll back its offending protection. This consequence may also deter it from introducing protection the next time around.

Delays in the GATT-panel and -council adjudication machinery may also play an important part in providing the two disputing countries with the time necessary to negotiate a settlement to a conflict that might otherwise escalate.

3. The one reservation here is that some of the less-developed countries (LDCs) that are not full participants in GATT agreements may view the GATT as a rich man's club which discriminates against them and thus reduces their welfare. However, this criticism is weakened by the preferences provided to LDC exports and the standing invitation extended to these countries to participate as full members in the GATT.

4. Cartels may come apart for various reasons. One possibility is that although cheating by any individual member may not damage the cartel, all members may have a similar incentive to cheat, and this *collective* cheating destroys the cartel.

5. As noted earlier, the Japanese are not as successful as they seem, because we are more aware of their winners, which get across the Pacific, than of their losers, which do not. One of the reasons the

Japanese have been able to pick winners is that whatever they pick has had a good chance of becoming a winner because of the relatively low level of Japanese wages and the yen. This problem was a serious one before flexible exchange rates, and it has reappeared recently as a result of high U.S. interest rates and the consequent high value of the U.S. dollar.

6. An important exception occurs whenever the participants are able to enlist the government as an enforcer of discipline; agriculture marketing boards provide a good example. Another example has been the Organization of Petroleum Exporting Countries (OPEC), which initially constituted a very weak cartel, except for the fact that the dominant supplier, the Saudis, were willing not only to control their own output, but even to reduce it in the face of over-supply. For this reason, OPEC is often described as an example of price leadership, rather than a cartel.

7. The 'bottom line' discipline by GATT that deters country A from cheating is the GATT-sanctioned retaliation that country B can impose on A's goods, if a complaint by B against A is sustained in the GATT.

   True, this bottom line is often not reached, because A and B typically arrive at a negotiated solution during the GATT adjudication process; but one can argue that the existence of this bottom line makes such an accommodation more likely than it would be otherwise. One of the examples of such GATT-sanctioned retaliation was the action that the United States took against the European Economic Community (EEC) in the 'Chicken War'.

8. The EEC also has a very large market. However, in a world of NTBs, there is little evidence so far that EEC participants would be able to co-ordinate these forms of import control.

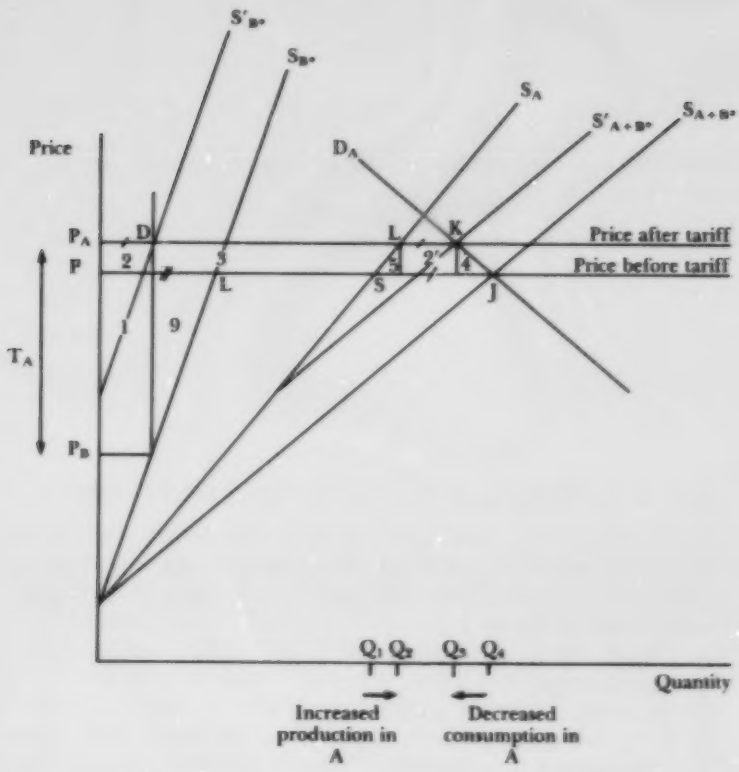
Appendix: Identifying Terms of Trade and Efficiency Effects of A's Tariff

Effects on Country A of its Own Tariff on its Imports

Suppose D_A and S_A in Figure A-1 represent domestic demand and supply in country A, and S_{B^*} represents excess supply from export country B; thus S_{A+B^*} is total supply in A from both domestic sources and from B. Pre-tariff equilibrium is at J with SJ = PL imported. When A imposed tariff T_A (which, without loss of generality, we assume is paid — though not necessarily borne — by B's exporters), then the supply from B into A's market is reduced from S_B to S'_{B^*}; accordingly, the total supply in A's market shifts from S_{A+B^*} to S'_{A+B^*}. New equilibrium is at K with imports reduced from SJ to LK = P_AD. A's treasury receives areas 1 + 2 = $T_A(P_AD)$ in duty revenue, of which 2 = 2′ is at the expense of A's consumers; that is, this is a domestic transfer from A's consumers to A's treasury (i.e., A's taxpayers). At the same time, there is an *international* transfer of area 1 to A's treasury (taxpayers) from exporters in B (whose net price has been reduced from P to P_B). This is the terms-of-trade loss to B (which is a terms-of-trade benefit to A) from A's tariff T_A.

But while A gets this terms-of-trade benefit at B's expense, A suffers two efficiency losses because its tariff has raised its domestic price from P to P_A, and this increase, in turn, has distorted its production and consumption. Specifically, area 5 is a loss in production efficiency in A, because Q_1Q_2 of A's original imports that cost P

Figure A-1: *Effects on A of its Own Import Tariff T_A*



Because of A's tariff, which raises domestic price in A from P to P_A:

A's taxpayers get duty revenue	+ 1			+ 2′ (since 2 = 2′)
A's consumers lose		−2 −3	−4 −5	− 2′
A's producers gain		+2 +3		
Net effect on A:	+ 1		− 4 − 5	
	Terms-of-trade gain	Transfer from A's consumers to producers	Efficiency losses	Transfer from A's consumers to taxpayers

are now, instead, being produced at home at the higher cost given by the height of the supply curve S_A (that is, the marginal cost curve in A). Similarly, area 4 is a loss in consumption efficiency because A has reduced its purchases of bargain-priced imports for consumption by Q_3Q_4. (A's consumers have lost 4, the difference between the low price P that they previously paid for these Q_3Q_4 units, and the higher valuation they placed on this good, as roughly given by the height of the demand curve D_A.) Thus:

(Statement A1)

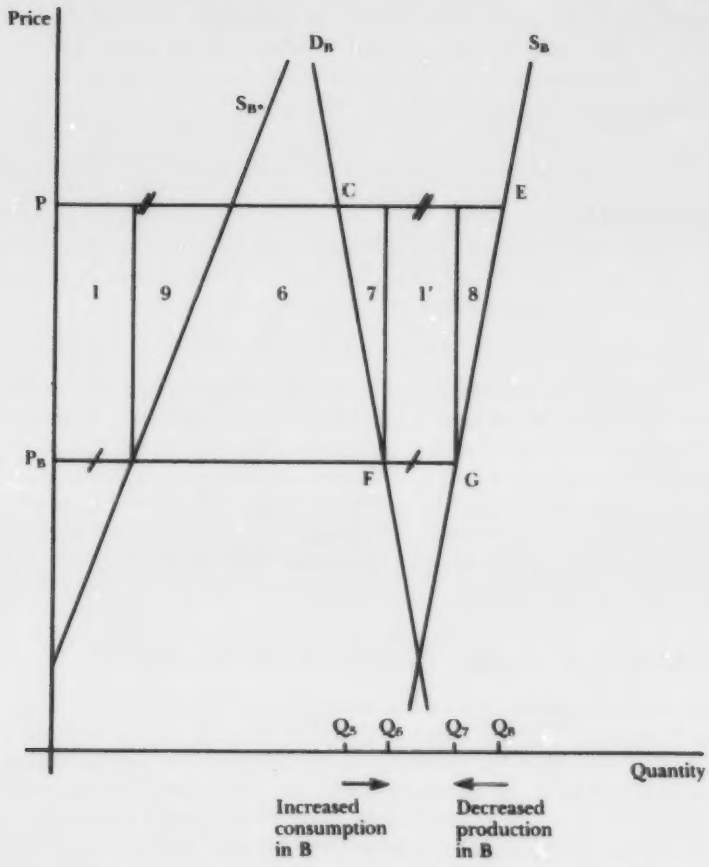
When country A imposes its own tariff, it incurs a terms-of-trade gain (area 1 in Figure A-1), but losses in production and consumption efficiency[1] (areas 5 and 4).

These effects are confirmed in the caption of Figure A-1, where we examine in detail how A's consumers lose, while A's producers and taxpayers benefit; these benefits and losses cancel, except for terms-of-trade benefit 1 and efficiency losses 4 + 5. (But note that this cancellation of benefits and losses represents a transfer of area 2 + 3 from A's consumers to A's producers; and, as already noted, a transfer of area 2′ from A's consumers to A's taxpayers.)

Effects of A's Import Tariff on Export Country B

We have already seen that B incurs terms-of-trade loss 1 in Figure A-1, because the net price it receives from A for its exports is reduced from P to P_B. But because exports are the marginal source of demand in B, its domestic price also falls from P to P_B. Consequently production- and consumption-efficiency losses occur in B; together they are shown as area 9. This is confirmed in Figure A-2, where we examine B's domestic supply S_B and demand D_B, with the horizontal difference between the two representing B's excess supply for export S_{B^*}. The domestic price in B before A's tariff is P, and after this tariff is P_B; these prices are reproduced from Figure A-1. Because of this lower price, consumption in B increases by Q_5Q_6, with an efficiency loss of area 7. (The Q_5Q_6 units previously exported at a price of P are instead now consumed domestically, where they generate the lower benefit shown approximately by the height of the demand curve D_B.) At the same time, this lower price

Figure A-2: *Effect of A's Tariff on B*



Because of A's tariff, which reduces B's export and domestic price from P to P_B:

B's producers lose	−1 −9 −6	−1'	−7 −8
B's consumers gain	+1 +9 +6		
Net effect on B		−1'	−7 −8
	Transfer from B's producers to consumers	Terms of trade loss = 1	Efficiency losses = 9

P_B reduces B's production by Q_7Q_8, with an efficiency loss of area 8. (These units previously generated a producer surplus, because they were sold for export for price P, but were produced at the lower cost represented by the height of S_B, the marginal cost curve in B. This surplus has been lost.)

In short, export country B unquestionably loses from A's tariff. B incurs both the terms-of-trade loss of area 1′ (which is, of course, the same as area 1 which appears here and in the previous diagram) and efficiency losses 7 + 8. But 7 + 8 must equal area 9, because 1′ = 1, and S_{B^*} is the horizontal difference between D_B and S_B. As detailed in the caption of Figure A-2, area 1 + 9 + 6 represents the transfer from producers to consumers in B that results because B's domestic price has fallen .

(Statement A2)

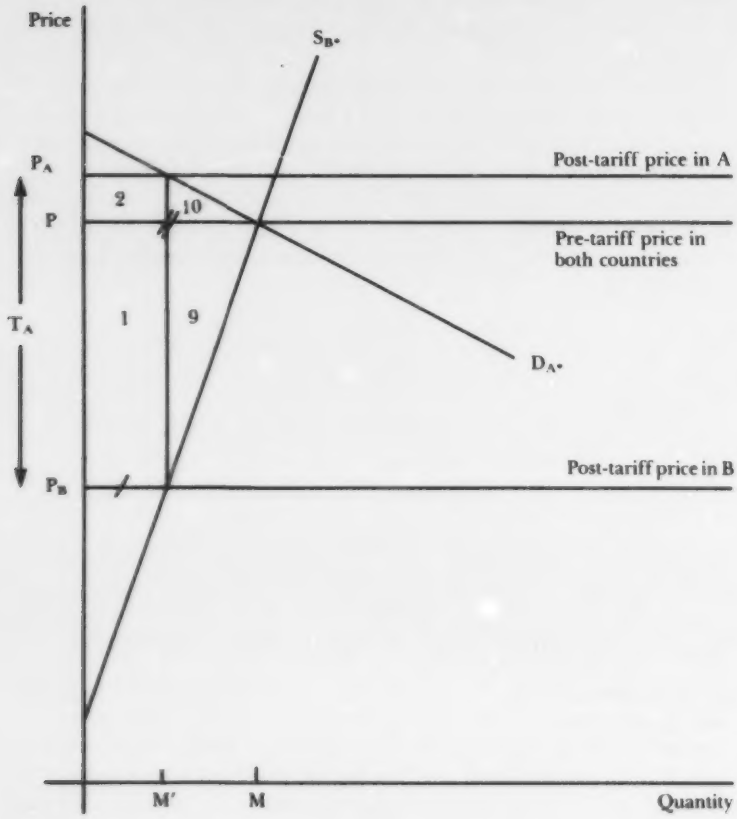
When A imposes a tariff on its imports from B, then B incurs losses in consumption and production efficiency (areas 7 + 8 = 9) and a terms-of-trade loss (area 1).

Summary of Effect of A's Tariff on Both Countries

While Figures A-1 and A-2 have provided detail on what is happening in each country, the overall effects on each are summarized in Figure A-3. The only new elements are D_{A^*}, the excess demand in country A, representing the horizontal difference in Figure A-1 between A's domestic demand D_A and supply S_A; and area 10, the *total* efficiency loss in A (equal to areas 4 + 5 in Figure A-2).[2]

In the case we are now considering, D_{A^*} is relatively elastic; country A's import demand is sensitive to price. On the other hand, S_{B^*} is relatively inelastic; country B's export supply is relatively insensitive to price. In other words, B is more committed to sell (i.e., is more willing to sell, regardless of price), than is A to buy. Therefore, as expected, B bears a relatively heavy burden of this tariff; that is to say, most of the effect of this tariff is to reduce the net price received by B from P to P_B. (The tariff raises the price in A only from P to P_A.) This makes the terms-of-trade transfer 1 from B to A large and, accordingly, makes it more likely that A will turn out to be a net winner. It also means that B's losses will be larger: not only does

Figure A-3: *Summary of Net Effects on Both Countries of A's Tariff*



A's tariff T_A reduces its imports from B from M to M'; this tariff raises price in A from P to P_A, and lowers price in B from P to P_B.

A collects duty revenue of 1 + 2; of this, 2 represents a transfer from A's consumers to A's treasury, while 1 is a transfer from B to A, that is, a terms-of-trade gain for A at B's expense. Transfers between consumers and producers in each country arising from shifts in domestic prices, are not shown on this diagram. For these transfers, see Figures A-1 and A-2.

10 is efficiency losses in A because of price rise = 4 + 5 in Figure A-1.
9 is efficiency losses in B because of price fall = 7 + 8 in Figure A-2.

the big drop in price make its terms-of-trade loss larger, but it also makes its efficiency losses 9 larger. In this example, note by how much these losses exceed A's efficiency losses 10.

Of course, if we draw these curves differently, with S_{B^*} far more elastic than D_{A^*}, then PP_B will be less than PP_A, and the importing country A can exercise far less power over its terms of trade; that is, the loss 1 of B will be much smaller.

Indeed, it is interesting to consider the limiting case where country B (the United States) is so large that from the point of view of its trading partner, Canada (Country A), the U.S. export supply S_{B^*} appears to be completely elastic, at least in manufactured goods. In turn, this guarantees that $P_B = P$, and area 1 disappears. (Canada cannot improve its terms of trade by imposing a tariff; instead, the terms of trade are determined by the completely elastic U.S. supply.) Moreover, U.S. efficiency losses 9 also disappear, with the only efficiency losses being 10, those incurred in Canada.

Thus we summarize:

(Statement A3)

Except under limiting assumptions, A's tariff benefits its terms of trade (area 1 in Figure A-3), but generates an efficiency loss (area 10). A's terms-of-trade gain 1 is, of course, B's terms-of-trade loss; and B also incurs an efficiency loss 9.[3] The importance of this terms-of-trade effect and the comparative size of the efficiency losses in A and B depend on the elasticities of D_{A^*} and S_{B^*}, which, in turn, depend on the elasticities of domestic demand and supply in the two countries.

Notes

1. While area 1 is a clear welfare gain to A, the judgement that efficiency losses 4 and 5 represent welfare losses requires a weak assumption about the welfare neutrality of domestic transfers in A.
2. Note that the construction of D_{A^*} and the proof that $10 = 4 + 5$ is similar to the construction of S_{B^*} and the proof that $9 = 7 + 8$ in Figure A-2.

3. If the barrier to imports imposed by A is a quota rather than a tariff, the results will be the same if the quota holders are from A, except that we must read 'these quota holders' for "A's taxpayers (treasury)". If the quota holders are from B, then, again reading 'these quota holders' for "A's taxpayers", we see that B no longer incurs a terms-of-trade loss 1. Instead, it now acquires a terms-of-trade gain 2 (which is a terms-of-trade loss for A).

   If producers are rent seeking or markets are imperfect, further complications must also be recognized.

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